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January 30, 2014.

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Re: Essroc Cement Company – Consent Decree  
Civil Action No. 2:11-cv-650-DSC  
Semi-Annual Report

To whom it may Concern:

Re: DOJ No. 90-5-2-1-09608

Puerto Rico Environmental Quality  
Board  
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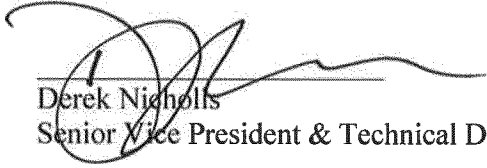
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Enclosed is Essroc's Semi-Annual Report for the period of July 1 to December 31, 2014.  
Please telephone me or Philip J. Schworer (859) 817-5903, if you have any questions.

Very truly yours,



Derek Nicholls  
Senior Vice President & Technical Director

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**ESSROC CEMENT CORP**

**CONSENT DECREE**

**SEMI-ANNUAL REPORT**

**January, 2015**

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## **I. Introduction**

The Consent Decree between Essroc, U.S. EPA and Affected States (effective on February 16, 2012) calls for Essroc Cement Corp ("Essroc") to submit Semi-Annual Reports (due on January 30 and July 30) to EPA and the Affected States for three years. Thereafter, Essroc is to submit an Annual Report (due on January 30) to EPA and the Affected States. The report must include the following information:

- a. Identify any and all dates on which Essroc has installed, or describe the progress of installation of, each Control Technology required for each Kiln under Section VI (NO<sub>x</sub> Control Technology, Emission Limits, and Monitoring Requirements) and Section VII (SO<sub>2</sub> Control Technology, Emission Limits, and Monitoring Requirements), and describe any problems encountered or anticipated during such installation, together with implemented or proposed solutions;
- b. Identify any and all dates on which Essroc has completed installation of, or describe the progress of installation of, each CEMS required under Section VI.B (NO<sub>x</sub> Continuous Emission Monitoring Systems) and Section VII.B (SO<sub>2</sub> Continuous Emission Monitoring Systems), and describe any problems encountered or anticipated during such installation, together with implemented or proposed solutions;
- c. Identify any and all dates on which Essroc Retired the Bessemer Kilns;
- d. Provide all CEMS data collected for each Kiln, including an explanation of any periods of CEMS downtime together with any missing data for which Essroc applied missing data substitution procedures, under Section VI.B (NO<sub>x</sub> Continuous Emission Monitoring Systems) and Section VII.B (SO<sub>2</sub> Continuous Emission Monitoring Systems);
- e. Demonstrate compliance with all applicable 30- Day Rolling Average Emission Limits in Section VI (NO<sub>x</sub> Control Technology, Emission Limits, and Monitoring Requirements) and Section VII (SO<sub>2</sub> Control Technology, Emission Limits, and Monitoring Requirements) of this Consent Decree;
- f. Provide a complete description and status of all actions Essroc has undertaken to comply with the Appendix of this Consent Decree;
- g. Demonstrate compliance with any applicable 30-Day Rolling Average Emission Limits established under Appendix A or B of this Consent Decree;

- h. If applicable, describe the status of actions undertaken pursuant to Section IX (Prohibition on Netting Credits or Offsets from Required Controls) of this Consent Decree;
- i. Describe the status of permit applications and any proposed SIP revisions required under this Consent Decree;
- j. Describe the status of any operation and maintenance work relating to activities required under this Consent Decree;

Information regarding the Mitigation Projects; and

Description of any non-compliance with the requirements of this Consent Decree and an explanation of the violation's likely cause and of the remedial steps taken, or to be taken, to prevent or minimize such violation.

(Consent Decree, Paragraph 49).

The remainder of this report provides the necessary information for each of the Essroc kiln's identified in the Consent Decree: Bessemer Kiln 4, Bessemer Kiln 5, Martinsburg Kiln 1, Logansport Kiln 1, Logansport Kiln 2, Speed Kiln 1, Speed Kiln 2, Nazareth Kiln 1, and San Juan Kiln 3.

Note, Essroc previously reported that Bessemer Kiln 4 and Kiln 5 were retired in April 2009. Consequently, all Consent Decree activities have been completed for Bessemer Kiln 4 and Kiln 5. No reporting on Bessemer Kiln 4 and Kiln 5 is required by the Consent Decree in this or subsequent semi-annual reports.

## II Kiln Specific Information Required by Paragraph 49 of the Consent Decree

### A) Martinsburg Kiln 1

Requirements:

NO<sub>x</sub>: Achieve a 30-Day Rolling Average emission limit of 2.15 lb/ton of clinker using SNCR by December 31, 2012.

SO<sub>2</sub>: Install Dry Scrubber technology and have in Continuous Operation by December 31, 2012. Then, determine 30-Day Rolling Average emission limit by Test & Set procedures (Appendix A), to be no higher than 1.50 lb/ton of clinker.

Status:

Paragraph 49 Reporting Requirements	Essroc's Status Report
a) Identify any and all dates on which Essroc has installed, or describe the progress of installation of, each Control Technology required for each Kiln under Section VI (NO <sub>x</sub> Control Technology, Emission Limits, and Monitoring Requirements) and Section VII (SO <sub>2</sub> Control Technology, Emission Limits, and Monitoring Requirements), and describe any problems encountered or anticipated during such installation, together with implemented or proposed solutions.	<p>NO<sub>x</sub>: Essroc achieved continuous operation of the SNCR prior to December 31, 2012. CEMS data provided in Attachment A documents that the 30-Day Rolling average emissions of NO<sub>x</sub> is less than the agreed-upon limit of 2.15 lb/ton of clinker.</p> <p>SO<sub>2</sub>: Essroc achieved continuous operation of the Dry Scrubber prior to December 31, 2012. CEMS data provided in Attachment A document that the 30-Day Rolling average emissions of SO<sub>2</sub> is less than 1.50 lb/ton of clinker.</p> <p>Optimization was completed in 2013. EPA and West Virginia approved the Optimization Report and the 30-Day Rolling Average emission limit of 1.50 lb/ton of clinker on September 17, 2013.</p> <p>Since the previous semi-annual report, Essroc sought and received authorization to conduct tests using dry lime injection instead of the current semi-dry technology for SO<sub>2</sub> control. The testing occurred over the period May 14 to 17, 2014. Essroc is currently evaluating the results of the tests and will submit a report to EPA summarizing the results and justification for requested modification(s) of the approved</p>

Paragraph 49 Reporting Requirements	Essroc's Status Report
	system, if any.
<p>b) Identify any and all dates on which Essroc has completed installation of, or describe the progress of installation of, each <b>CEMS</b> required under Section VI.B (NO<sub>x</sub> Continuous Emission Monitoring Systems) and Section VII.B (SO<sub>2</sub> Continuous Emission Monitoring Systems), and</p> <p>describe any problems encountered or anticipated during such installation, together with implemented or proposed solutions.</p>	<p>CEMS installation was completed prior to the Effective Date of the Consent Decree.</p> <p>Essroc installed a new data management system for the CEMS. The new system manufactured by VIM Technology uses the CEMLink 6 program. The new system has been running in parallel with the existing system, the PF Sistemi (Italian) system. Parallel data collection will confirm proper operation of the new system. Essroc continues to run both systems in parallel while the new system continues to be evaluated and verified. Having the system in parallel has helped to resolve some issues with the programing part of CEMLink 6. We are continuing to run both systems to make sure that they are accurate.</p>
<p>c) Identify any and all dates on which Essroc retired the Bessemer Kilns.</p>	Not applicable
<p>d) Provide all CEMS data collected for each Kiln, including an explanation of any periods of CEMS downtime together with any missing data for which Essroc applied missing data substitution procedures, under Section VI.B (NO<sub>x</sub> Continuous Emission Monitoring Systems) and Section VII.B (SO<sub>2</sub> Continuous Emission Monitoring Systems).</p>	CEMS data is provided as Attachment A.
<p>e) Demonstrate compliance with all applicable 30- Day Rolling Average Emission Limits in Section VI (NO<sub>x</sub> Control Technology, Emission Limits, and Monitoring Requirements) and Section VII (SO<sub>2</sub> Control Technology, Emission Limits, and Monitoring Requirements) of this Consent Decree.</p> <p>NO<sub>x</sub> Control Technology Requirement:  <u>Achieve a 30-Day Rolling Average emission limit of 2.15 lb/ton of clinker using SNCR by</u></p>	<p>NO<sub>x</sub>: As documented by the CEMS data provided in Attachment A, the 30-Day rolling average emission rate for this reporting period was below 2.15 lb/ton of clinker.</p> <p>SO<sub>2</sub>: As documented by the CEMS data provided in Attachment A, the 30-Day rolling average emission rate for this reporting was below 1.50 lb/ton on all except two consecutive days were the emission rate</p>

Paragraph 49 Reporting Requirements	Essroc's Status Report
<p><u>December 31, 2012.</u></p> <p><u>SO<sub>2</sub> Control Technology Requirement: Install Dry Scrubber technology and Continuously Operate by December 31, 2012. Determine emission limit by Test &amp; Set (Appendix A), to be no higher than 1.50 lb/ton of clinker.</u></p>	<p>reached 1.51. A final investigation report was submitted to the EPA and state regarding this matter and is included in Appendix H for reference.</p>
<p>f) Provide a complete description and status of all actions Essroc has undertaken to comply with the Appendix of this Consent Decree.</p> <p><u>Appendix A: Test &amp; Set for SO<sub>2</sub>:</u></p> <p><u>Baseline Data Collection</u></p> <p><u>Baseline Data Report:</u> Submit Baseline Data Report (within <b>45 days</b> of completing the Baseline Data Collection)(App A, Para 7)</p> <p><u>Optimization Protocol</u></p> <p>Submit Optimization Protocol to EPA by at least <b>9/30/12</b> for approval. (Not less than 90 days prior to the commencement of optimization) (requirements for the protocol are found in App A, Para 11).</p> <p><u>Continuous Operation:</u> by December 31, 2012.</p> <p><u>Optimization Period:</u> Conduct in accordance with the Optimization Protocol. Shall last no longer than 150 operating days.</p> <p><u>Optimization Report :</u> Submit a report to EPA within 30 days following completion of the Optimization Period.</p>	<p><u>Optimization Protocol:</u> Approved by EPA prior to conduction tests.</p> <p><u>Continuous Operation</u> was achieved prior to the December 31, 2012 deadline.</p> <p><u>Optimization Period:</u> Optimization, using the approved Optimization Protocol has been implemented.</p> <p><u>Optimization Report:</u> The Optimization Report was submitted to EPA and the West Virginia on July 17, 2013. EPA and West Virginia approved the Optimization Report on September 17, 2013</p> <p><u>Demonstration Period:</u> Essroc commenced the Demonstration Period on September 25, 2013.</p> <p><u>Demonstration Report:</u> The first report for the operations between September 25, 2013 and December 31, 2013 was submitted with the January 2014 Semi Annual report. The second report for the operations between January 1 and March 31, 2014 was submitted to EPA on May 20, 2014. The third report for the operations between April 1 and June 30, 2013 was submitted with the previous semi-annual report .</p> <p>The Demonstration Period is authorized to last</p>

Paragraph 49 Reporting Requirements	Essroc's Status Report
<p><u>Demonstration Period</u> : To commence 7 days after Essroc receives EPA's approval of the final Optimization Report. Demonstration shall last 300 Operating Days. Periodic report to EPA every 3 months.</p> <p><u>Demonstration Report</u> : To be submitted within 60 days of completing the Demonstration Period. Report must propose the 30-Day Rolling Average Emission Limit. EPA can approve the proposed limit or can establish an alternative limit. Essroc can invoke Dispute Resolution if it disagrees with the alternative limit, see Para 74 of the Consent Decree.</p> <p><u>Appendix B</u>: Not applicable</p> <p><u>Appendix C</u>: Mitigation Projects:</p>	<p>300 Operating Days. Essroc estimates that the Demonstration Period concluded on September 3, 2014.</p> <p>Essroc submitted the Demonstration Report to EPA on or about November 18, 2014. Essroc received a letter from EPA advising that the Demonstration Period Report was accepted and documented that the emission limit was now in effect for the facility.</p> <p><u>Appendix B</u>: Not applicable</p> <p><u>Appendix C</u>: Essroc completed the mitigation projects for the Martinsburg kiln as reported in the January 2014 semi annual report.</p>
<p>g) Demonstrate compliance with any applicable 30-Day Rolling Average Emission Limits established under Appendix A or B of this Consent Decree</p>	<p>As documented by the CEMS data provided in Attachment A, the 30-Day rolling average NOx emission rate is below 2.15 lb/ton of clinker.</p> <p>EPA and West Virginia approved the optimized SO<sub>2</sub> emission rate of 1.5 lbs/ton of clinker. An investigation report regarding two exceedances reported in this document is submitted in Attachment H for reference.</p>
<p>h) If applicable, describe the status of actions undertaken pursuant to Section IX (Prohibition on Netting Credits or Offsets from Required Controls) of this Consent Decree</p>	<p>Not applicable</p>
<p>i) Describe the status of permit applications and any proposed SIP revisions required under this Consent Decree</p>	<p>Essroc submitted application for a Class II Administrative Update permit on April 8, 2014. The modified permit was effective on October 31, 2014.</p>



Paragraph 49 Reporting Requirements	Essroc's Status Report
j) Describe the status of any operation and maintenance work relating to activities required under this Consent Decree	Not applicable
Description of any non-compliance with the requirements of this Consent Decree and an explanation of the violation's likely cause and of the remedial steps taken, or to be taken, to prevent or minimize such violation.	The facility had exceeded the 1.50 lb/ton limit for SO <sub>2</sub> . A letter was submitted explaining the violation's likely cause and the remedial steps taken. That letter is included in Attachment H for reference.

B) Logansport Kiln 1

Requirements:

NO<sub>x</sub>: Conduct an SCR Pilot Study (to run a minimum of 4 months) in accordance with Appendix B. Submit the SCR Pilot Report by July 31, 2013 with results of the SCR Pilot Study. Following approval by U.S. EPA: if SCR works, install a full-scale system by September 30, 2014, continuously operate by December 31, 2014, and conduct an SCR Demonstration Period to establish an emission limit by the Test & Set procedures found in Appendix B; if SCR does not work, install SNCR and propose a Test & Set limit under Appendix A that is no less stringent than 7.00 lb/ton of clinker by December 31, 2014.

SO<sub>2</sub>: Achieve emission limit of 3.50 lb/ton of clinker using a Dry Scrubber by December 31, 2013.

Status:

Paragraph 49 Reporting Requirements	Essroc's Status Report
a. Identify any and all dates on which Essroc has installed, or describe the progress of installation of, each <b>Control Technology</b> required for each Kiln under Section VI (NO <sub>x</sub> Control Technology, Emission Limits, and Monitoring Requirements) and Section VII (SO <sub>2</sub> Control Technology, Emission Limits, and Monitoring Requirements), and  describe any problems encountered or anticipated during such installation, together with implemented or proposed solutions.	NO <sub>x</sub> : In process, see below regarding status of the SCR Pilot Study.  SO <sub>2</sub> : The Dry Scrubber was installed on December 26, 2013.
b. Identify any and all dates on which Essroc has completed installation of, or describe the progress of installation of, each <b>CEMS</b> required under Section VI.B (NO <sub>x</sub> Continuous Emission Monitoring Systems) and Section VII.B (SO <sub>2</sub> Continuous Emission Monitoring Systems), and  describe any problems encountered or anticipated during such installation, together with implemented or proposed solutions.	CEMS installation was completed prior to the Effective Date of the Consent Decree. CEMS data is provided as Attachment B.
c. Identify any and all dates on which Essroc Retired the Bessemer Kilns	Not applicable.

Paragraph 49 Reporting Requirements	Essroc's Status Report
<p>d. Provide all CEMS data collected for each Kiln, including an explanation of any periods of CEMS downtime together with any missing data for which Essroc applied missing data substitution procedures, under Section VI.B (NO<sub>x</sub> Continuous Emission Monitoring Systems) and Section VII.B (SO<sub>2</sub> Continuous Emission Monitoring Systems).</p>	<p>See attached.</p>
<p>e. Demonstrate compliance with all applicable 30- Day Rolling Average Emission Limits in Section VI (NO<sub>x</sub> Control Technology, Emission Limits, and Monitoring Requirements) and Section VII (SO<sub>2</sub> Control Technology, Emission Limits, and Monitoring Requirements) of this Consent Decree.</p>	<p>In process, see below regarding status.</p>
<p>f. Provide a complete description and status of all actions Essroc has undertaken to comply with the Appendix of this Consent Decree</p> <p><u>Appendix A:</u> Applicable only if SNCR is used because the SCR Pilot Study was deemed not successful.</p> <p><u>Appendix B:</u> for SCR pilot study and potential full-scale demonstration.</p> <p>SCR Pilot Study: Essroc will design a study in accordance with the Pilot Study requirements found in Appendix B. The pilot scale SCR shall operate for a minimum of 4 months.</p> <p>SCR Pilot Study Report: Shall contain all of the information identified in Appendix B and be submitted to EPA by July 31, 2013.</p> <p>Continuous Operation: If EPA approves the Pilot Study Report and SCR is feasible, Essroc will install and continuously operate SCR by September 30, 2014. If EPA concurs that SCR is not feasible, Essroc will install and continuously operate SNCR by September 30, 2014.</p>	<p><u>Appendix A:</u> Not applicable until SCR is determined to be unworkable.</p> <p><u>Appendix B:</u></p> <p>The SCR Pilot Study equipment was delivered to the site in January 2013. The SCR Pilot study was conducted between January and July 2013. The SCR Pilot Study Report was submitted to EPA and IDEM prior to the July 31, 2013 agreed date. Essroc concluded that the SCR Pilot Study was not successful and that SCR technology is not a feasible alternative for the Logansport kilns.</p> <p>EPA disapproved the SCR Pilot Study Report. Essroc invoked informal dispute resolution provided for by the Consent Decree. Essroc and EPA participated in informal dispute resolution, but were unable to come to agreement.</p> <p>Essroc invoked formal dispute resolution on May 16, 2014. By agreement of the parties,</p>

Paragraph 49 Reporting Requirements	Essroc's Status Report
<p>SCR Demonstration Period: shall commence by December 31, 2014, span at least 140 operating days, and satisfy the requirements of Appendix B.</p> <p>SCR Demonstration Report: To identify a proposed 40-Day Rolling Average Emission Limit for NO<sub>x</sub>.</p> <p>SNCR Install: If SNCR is installed, Essroc shall propose a 30-Day Rolling Average Emission Limit for NO<sub>x</sub> by December 31, 2014.</p> <p><u>Appendix C</u>: Not applicable.</p>	<p>EPA's response will be provided to Essroc on August 4, 2014. If the dispute is not resolved, the Consent Decree provides that Essroc shall file a motion with the federal court.</p> <p>The September 30, 2014 date was not met for installation of SCR or SNCR. The date is predicated on EPA's approval of the SCR Pilot Study report. As discussed above, EPA has disapproved the SCR Pilot Study report and Essroc has invoked formal dispute resolution. Essroc and EPA have continued in settlement discussion prior to filing a motion with the federal court.</p>
<p>g. Demonstrate compliance with any applicable 30-Day Rolling Average Emission Limits established under Appendix A or B of this Consent Decree.</p>	<p>In process.</p>
<p>h. If applicable, describe the status of actions undertaken pursuant to Section IX (Prohibition on Netting Credits or Offsets from Required Controls) of this Consent Decree.</p>	<p>Not applicable.</p>
<p>i. Describe the status of permit applications and any proposed SIP revisions required under this Consent Decree.</p> <ul style="list-style-type: none"> <li>• Application to include the Dry Scrubber and SO<sub>2</sub> emission limit in the Title V permit must be filed on or before December 31, 2014 (one year after the control technology is installed).</li> <li>• Application to include the NO<sub>x</sub> control technology will occur up to one year follow installation, optimization and demonstration of the control</li> </ul>	<p>Not applicable at this time.</p>

Paragraph 49 Reporting Requirements	Essroc's Status Report
technology.	
j. Describe the status of any operation and maintenance work relating to activities required under this Consent Decree.	Not applicable at this time.
Description of any non-compliance with the requirements of this Consent Decree and an explanation of the violation's likely cause and of the remedial steps taken, or to be taken, to prevent or minimize such violation.	Not applicable.

C) Logansport Kiln 2

Kiln was restarted on February 26, 2013. Notice of restart was provided to EPA and IDEM on March 19, 2013.

Requirements:

NOx: If SCR is installed on Logansport Kiln 1, Essroc shall install SCR on Logansport Kiln 2 by September 30, 2015. Emission limit to be established by Test & Set. If SNCR is installed on Logansport Kiln 1, Essroc shall install SNCR on Logansport Kiln 2 by September 30, 2015. Emission limit to be established by Test & Set, and must be below 7.00 lb/ton of clinker.

SO<sub>2</sub>: Achieve emission limit of 4.80 lb/ton of clinker using a Dry Scrubber by December 31, 2014.

Status:

Paragraph 49 Reporting Requirements	Essroc's Status Report
<p>a. Identify any and all dates on which Essroc has installed, or describe the progress of installation of, each Control Technology required for each Kiln under Section VI (NO<sub>x</sub> Control Technology, Emission Limits, and Monitoring Requirements) and Section VII (SO<sub>2</sub> Control Technology, Emission Limits, and Monitoring Requirements), and</p> <p>describe any problems encountered or anticipated during such installation, together with implemented or proposed solutions.</p>	<p>NOx: Direction will depend upon the results of the SCR Pilot Study that was conducted on Logansport Kiln 1.</p> <p>SO<sub>2</sub>: The facility achieved installation and operation of Dry Scrubber by December 31, 2014.</p>
<p>b. Identify any and all dates on which Essroc has completed installation of, or describe the progress of installation of, each CEMS required under Section VI.B (NO<sub>x</sub> Continuous Emission Monitoring Systems) and Section VII.B (SO<sub>2</sub> Continuous Emission Monitoring Systems), and</p> <p>describe any problems encountered or anticipated during such installation, together with implemented or proposed solutions.</p>	<p>CEMS installation was completed prior to the Effective Date of the Consent Decree. CEMS data is provided as Attachment C.</p>
<p>c. Identify any and all dates on which Essroc Retired the Bessemer Kilns.</p>	<p>Not applicable.</p>

Paragraph 49 Reporting Requirements	Essroc's Status Report
d. Provide all CEMS data collected for each Kiln, including an explanation of any periods of CEMS downtime together with any missing data for which Essroc applied missing data substitution procedures, under Section VI.B (NO <sub>x</sub> Continuous Emission Monitoring Systems) and Section VII.B (SO <sub>2</sub> Continuous Emission Monitoring Systems).	CEMS data provided as Attachment C.
e. Demonstrate compliance with all applicable 30- Day Rolling Average Emission Limits in Section VI (NO <sub>x</sub> Control Technology, Emission Limits, and Monitoring Requirements) and Section VII (SO <sub>2</sub> Control Technology, Emission Limits, and Monitoring Requirements) of this Consent Decree.	Not applicable at this time.
<p>f. Provide a complete description and status of all actions Essroc has undertaken to comply with the Appendix of this Consent Decree.</p> <p><u>Appendix A:</u> If applicable, install SNCR by September 30, 2015. (Applicable if SNCR is used because the SCR was deemed not successful during the Kiln 1 SCR Pilot Study.) Propose a 30-Day Rolling Average Emission Limit by December 31, 2015.</p> <p><u>Appendix B:</u> If feasible, install and Continuously Operate SCR by September 30, 2015. Conduct Demonstration Period and propose a 30-Day Rolling Average Emission Limit by May 31, 2016.</p> <p><u>Appendix C:</u> Not applicable.</p>	Installation of SCR or SNCR will depend upon the resolution of the formal dispute.
g. Demonstrate compliance with any applicable 30-Day Rolling Average Emission Limits established under Appendix A or B of this Consent Decree.	Not applicable at this time.
h. If applicable, describe the status of actions undertaken pursuant to Section IX (Prohibition on Netting Credits or Offsets from Required	Not applicable.

Paragraph 49 Reporting Requirements	Essroc's Status Report
Controls) of this Consent Decree.	
<p>i. Describe the status of permit applications and any proposed SIP revisions required under this Consent Decree.</p> <ul style="list-style-type: none"> <li>• Application to include the Dry Scrubber and SO<sub>2</sub> emission limit in the Title V permit must be filed on or before December 31, 2015 (one year after the control technology is installed).</li> <li>• Application to include the NO<sub>x</sub> control technology will follow up to one year following installation, optimization and demonstration of the control technology.</li> </ul>	To be completed at a future date.
j. Describe the status of any operation and maintenance work relating to activities required under this Consent Decree.	Not applicable.
Information regarding the Mitigation Projects.	Not applicable.
Description of any non-compliance with the requirements of this Consent Decree and an explanation of the violation's likely cause and of the remedial steps taken, or to be taken, to prevent or minimize such violation.	Not applicable.



D) Speed Kiln 1

This kiln went into Temporary Cessation on February 16, 2012. Essroc briefly operated the kiln in June and July 2013 and then returned the kiln to Temporary Cessation status. If the kiln is restarted after December 31, 2013, it will be restarted with SNCR and Dry Scrubber technology. The kiln was not operated over the period July 1 through December 31, 2014.

Requirements:

NO<sub>x</sub>: Achieve a 30-Day Rolling Average emission limit of 3.50 lb/ton of clinker using SNCR by December 31, 2013.

SO<sub>2</sub>: Achieve a 30-Day Rolling Average emission limit of 1.00 lb/ton of clinker (including the alkali bypass) using a Dry Scrubber by December 31, 2013.

Status:

Paragraph 49 Reporting Requirements	Essroc's Status Report
a. Identify any and all dates on which Essroc has installed, or describe the progress of installation of, each <b>Control Technology</b> required for each Kiln under Section VI (NO <sub>x</sub> Control Technology, Emission Limits, and Monitoring Requirements) and Section VII (SO <sub>2</sub> Control Technology, Emission Limits, and Monitoring Requirements), and  describe any problems encountered or anticipated during such installation, together with implemented or proposed solutions.	As provided by Paragraph 31 of the Consent Decree, if the kiln is brought back into operation on or after December 31, 2013, the kiln will have SNCR and Dry Scrubber technology installed and operating to meet the applicable 30-Day Rolling Average emission limits.
b. Identify any and all dates on which Essroc has completed installation of, or describe the progress of installation of, each <b>CEMS</b> required under Section VI.B (NO <sub>x</sub> Continuous Emission Monitoring Systems) and Section VII.B (SO <sub>2</sub> Continuous Emission Monitoring Systems), and  describe any problems encountered or anticipated during such installation, together with implemented or proposed solutions.	Kiln currently in Temporary Cessation.
c. Identify any and all dates on which Essroc Retired the Bessemer Kilns.	Not applicable.

Paragraph 49 Reporting Requirements	Essroc's Status Report
d. Provide all CEMS data collected for each Kiln, including an explanation of any periods of CEMS downtime together with any missing data for which Essroc applied missing data substitution procedures, under Section VI.B (NO <sub>x</sub> Continuous Emission Monitoring Systems) and Section VII.B (SO <sub>2</sub> Continuous Emission Monitoring Systems).	Not applicable. Kiln in Temporary Cessation.
e. Demonstrate compliance with all applicable 30- Day Rolling Average Emission Limits in Section VI (NO <sub>x</sub> Control Technology, Emission Limits, and Monitoring Requirements) and Section VII (SO <sub>2</sub> Control Technology, Emission Limits, and Monitoring Requirements) of this Consent Decree.	Kiln in Temporary Cessation.
f. Provide a complete description and status of all actions Essroc has undertaken to comply with the Appendix of this Consent Decree.  Appendix A: Not applicable  Appendix B: Not applicable  Appendix C: Speed plant mitigation project:	Appendix A: Not applicable  Appendix B: Not applicable  Appendix C: The Speed plant mitigation project was completed on or before December 31, 2012 as reported in previous semi-annual reports.
g. Demonstrate compliance with any applicable 30-Day Rolling Average Emission Limits established under Appendix A or B of this Consent Decree.	Not applicable.
h. If applicable, describe the status of actions undertaken pursuant to Section IX (Prohibition on Netting Credits or Offsets from Required Controls) of this Consent Decree.	Not applicable.
i. Describe the status of permit applications and any proposed SIP revisions required under this Consent Decree.  Application to include the control technologies and emission limit will be submitted no more	To be completed at a future date.

Paragraph 49 Reporting Requirements	Essroc's Status Report
than one year following restart as discussed above.	
j. Describe the status of any operation and maintenance work relating to activities required under this Consent Decree.	Not applicable.
Description of any non-compliance with the requirements of this Consent Decree and an explanation of the violation's likely cause and of the remedial steps taken, or to be taken, to prevent or minimize such violation.	Not applicable.

E) Speed Kiln 2

Requirements:

NOx: Achieve a 30-Day Rolling Average emission limit of 2.10 lb/ton of clinker using SNCR by December 31, 2012.

SO<sub>2</sub> : Achieve emission limit no higher than 1.70 lb/ton of clinker (including the alkali bypass) using a Dry Scrubber by December 31, 2013.

Status:

Paragraph 49 Reporting Requirements	Essroc's Status Report
a. Identify any and all dates on which Essroc has installed, or describe the progress of installation of, each Control Technology required for each Kiln under Section VI (NO <sub>x</sub> Control Technology, Emission Limits, and Monitoring Requirements) and Section VII (SO <sub>2</sub> Control Technology, Emission Limits, and Monitoring Requirements), and  describe any problems encountered or anticipated during such installation, together with implemented or proposed solutions.	NOx: Essroc achieved continuous operation of the SNCR prior to December 31, 2012. CEMS data provided in Attachment E document that the 30-Day Rolling average emissions of NOx is less than the agreed-upon limit of 2.10 lb/ton of clinker.  SO2: Construction of the Dry Scrubber was completed prior to December 31, 2013.
b. Identify any and all dates on which Essroc has completed installation of, or describe the progress of installation of, each CEMS required under Section VI.B (NO <sub>x</sub> Continuous Emission Monitoring Systems) and Section VII.B (SO <sub>2</sub> Continuous Emission Monitoring Systems), and  describe any problems encountered or anticipated during such installation, together with implemented or proposed solutions.	CEMS installation was completed prior to the Effective Date of the Consent Decree. CEMS data is provided as Attachment E.
c. Identify any and all dates on which Essroc Retired the Bessemer Kilns.	Not applicable.
d. Provide all CEMS data collected for each Kiln, including an explanation of any periods of CEMS downtime together with any missing data for which Essroc applied missing data substitution procedures, under Section VI.B (NO <sub>x</sub> Continuous Emission Monitoring	See Attachment E for the CEMS data summary.

Paragraph 49 Reporting Requirements	Essroc's Status Report
Systems) and Section VII.B (SO <sub>2</sub> Continuous Emission Monitoring Systems).	
e. Demonstrate compliance with all applicable 30- Day Rolling Average Emission Limits in Section VI (NO <sub>x</sub> Control Technology, Emission Limits, and Monitoring Requirements) and Section VII (SO <sub>2</sub> Control Technology, Emission Limits, and Monitoring Requirements) of this Consent Decree.	<p>NO<sub>x</sub>: Compliance with the Emission Limit is demonstrated with the 30-day rolling average emission rate commencing on December 31, 2012. See Attachment E.</p> <p>SO<sub>2</sub>: Compliance with the Emission Limit is demonstrated with 30-day rolling average emission rate prior to December 31, 2013. See Attachment E.</p>
<p>f. Provide a complete description and status of all actions Essroc has undertaken to comply with the Appendix of this Consent Decree</p> <p>Appendix A: Not applicable.</p> <p>Appendix B: Not applicable.</p> <p>Appendix C: Speed mitigation project:</p>	<p>Appendix A: Not applicable.</p> <p>Appendix B: Not applicable.</p> <p>Appendix C: The Speed mitigation project was completed on or before December 31, 2012 as reported in previous semi-annual reports.</p>
g. Demonstrate compliance with any applicable 30-Day Rolling Average Emission Limits established under Appendix A or B of this Consent Decree.	Not applicable.
h. If applicable, describe the status of actions undertaken pursuant to Section IX (Prohibition on Netting Credits or Offsets from Required Controls) of this Consent Decree.	Not applicable.
i. Describe the status of permit applications and any proposed SIP revisions required under this Consent Decree.	Completed with issuance of permit modification by IDEM dated October 24, 2013.
j. Describe the status of any operation and maintenance work relating to activities required under this Consent Decree.	Not applicable.
Description of any non-compliance with the requirements of this Consent Decree and an explanation of the violation's likely cause and	Not applicable.

Paragraph 49 Reporting Requirements	Essroc's Status Report
of the remedial steps taken, or to be taken, to prevent or minimize such violation.	

F) Nazareth Kiln 1

Requirements:

NOx: Achieve a 30-Day Rolling Average emission limit of 2.30 lb/ton of clinker using SNCR by July 1, 2012.

SO<sub>2</sub>: Achieve emission limit no higher than 1.80 lb/ton of clinker using a Dry Scrubber by December 31, 2014.

Status:

Paragraph 49 Reporting Requirements	Essroc's Status Report
<p>a. Identify any and all dates on which Essroc has installed, or describe the progress of installation of, each Control Technology required for each Kiln under Section VI (NO<sub>x</sub> Control Technology, Emission Limits, and Monitoring Requirements) and Section VII (SO<sub>2</sub> Control Technology, Emission Limits, and Monitoring Requirements), and</p> <p>describe any problems encountered or anticipated during such installation, together with implemented or proposed solutions.</p>	<p>NOx: SNCR was installed in May 2011, prior to the Effective Date of this Consent Decree. CEMS data provided as Attachment F document that the NOx emission rate is below the agreed-upon limit of 2.30 lb/ton of clinker.</p> <p>SO<sub>2</sub>: Construction of the Dry Scrubber was accomplished by the December 31, 2014 compliance date. The scrubber has been in continuous operation since that date.</p>
<p>b. Identify any and all dates on which Essroc has completed installation of, or describe the progress of installation of, each CEMS required under Section VI.B (NO<sub>x</sub> Continuous Emission Monitoring Systems) and Section VII.B (SO<sub>2</sub> Continuous Emission Monitoring Systems), and</p> <p>describe any problems encountered or anticipated during such installation, together with implemented or proposed solutions.</p>	<p>CEMS installation was completed prior to the Effective Date of the Consent Decree. CEMS data are provided as Attachment F.</p>
<p>c. Identify any and all dates on which Essroc Retired the Bessemer Kilns.</p>	<p>Not applicable.</p>
<p>d. Provide all CEMS data collected for each Kiln, including an explanation of any periods of CEMS downtime together with any missing data for which Essroc applied missing data substitution procedures, under Section VI.B (NO<sub>x</sub> Continuous Emission Monitoring</p>	<p>See Attachment F for the CEMS data.</p>

Paragraph 49 Reporting Requirements	Essroc's Status Report
Systems) and Section VII.B (SO <sub>2</sub> Continuous Emission Monitoring Systems).	
e. Demonstrate compliance with all applicable 30- Day Rolling Average Emission Limits in Section VI (NO <sub>x</sub> Control Technology, Emission Limits, and Monitoring Requirements) and Section VII (SO <sub>2</sub> Control Technology, Emission Limits, and Monitoring Requirements) of this Consent Decree.	Data provided in Attachment F demonstrates that the 30-day rolling average NO <sub>x</sub> Emission Rate is below 2.30 lb/ton of clinker limit. Calculation of the 30 day emission rate of SO <sub>2</sub> commenced on January 1, 2015 and will be reported in the next semi annual report.
f. Provide a complete description and status of all actions Essroc has undertaken to comply with the Appendix of this Consent Decree  Appendix A: Not applicable.  Appendix B: Not applicable.  Appendix C: Nazareth mitigation project;	Appendix A and B: Not applicable.  Appendix C: The Nazareth mitigation project was completed on May 31, 2012 as reported in previous semi-annual reports.
g. Demonstrate compliance with any applicable 30-Day Rolling Average Emission Limits established under Appendix A or B of this Consent Decree.	Not applicable.
h. If applicable, describe the status of actions undertaken pursuant to Section IX (Prohibition on Netting Credits or Offsets from Required Controls) of this Consent Decree.	Not applicable.
i. Describe the status of permit applications and any proposed SIP revisions required under this Consent Decree.	Completed for the SNCR. To be completed for the Dry Scrubber on or before December 31, 2015 (one year after installation of the control device).
j. Describe the status of any operation and maintenance work relating to activities required under this Consent Decree.	Not applicable.
Description of any non-compliance with the requirements of this Consent Decree and an explanation of the violation's likely cause and of the remedial steps taken, or to be taken, to	Not applicable.



Paragraph 49 Reporting Requirements	Essroc's Status Report
prevent or minimize such violation.	

G) San Juan Kiln 3

Requirements:

NO<sub>x</sub>: Install SNCR by December 31, 2013. Emission limit to be established by Test & Set and shall be no higher than 2.30 lb/ton of clinker.

SO<sub>2</sub> :Achieve emission limit no higher than 1.00 lb/ton of clinker using a Dry Scrubber by December 31, 2013.

Status:

Paragraph 49 Reporting Requirements	Essroc's Status Report
a. Identify any and all dates on which Essroc has installed, or describe the progress of installation of, each <b>Control Technology</b> required for each Kiln under Section VI (NO <sub>x</sub> Control Technology, Emission Limits, and Monitoring Requirements) and Section VII (SO <sub>2</sub> Control Technology, Emission Limits, and Monitoring Requirements), and describe any problems encountered or anticipated during such installation, together with implemented or proposed solutions.	On January 17, 2014, the kiln started with an SNCR and a Dry Scrubber.
b. Identify any and all dates on which Essroc has completed installation of, or describe the progress of installation of, each <b>CEMS</b> required under Section VI.B (NO <sub>x</sub> Continuous Emission Monitoring Systems) and Section VII.B (SO <sub>2</sub> Continuous Emission Monitoring Systems), and describe any problems encountered or anticipated during such installation, together with implemented or proposed solutions.	CEMS installation was completed prior to the Effective Date of the Consent Decree. Attachment G provides the NO <sub>x</sub> and SO <sub>2</sub> CEMS data.
c. Identify any and all dates on which Essroc Retired the Bessemer Kilns.	Not applicable to San Juan.
d. Provide all CEMS data collected for each Kiln, including an explanation of any periods of CEMS downtime together with any missing data for which Essroc applied missing data substitution procedures, under Section VI.B (NO <sub>x</sub> Continuous Emission Monitoring Systems) and Section VII.B (SO <sub>2</sub> Continuous	See Attachment G.

Paragraph 49 Reporting Requirements	Essroc's Status Report
Emission Monitoring Systems).	
<p>e. Demonstrate compliance with all applicable 30- Day Rolling Average Emission Limits in Section VI (NO<sub>x</sub> Control Technology, Emission Limits, and Monitoring Requirements) and Section VII (SO<sub>2</sub> Control Technology, Emission Limits, and Monitoring Requirements) of this Consent Decree.</p>	<p>In May 2014, Essroc upgraded the CEMS system to the CEMLink 6 program. Data reported in Attachment G underwent additional quality assurance checks by Essroc and its contractor, VIM to remove any bias created by the system upgrade.</p> <p>The evaluation found the following:</p> <ul style="list-style-type: none"> <li>-Kiln On Process Status: System status signals were being taken from fuel pump "run" status. The definition needed to be changed to include the fuel feed valve status so that no recirculation events would be taken to be Kiln as Kiln Operation. This was corrected.</li> <li>-Kiln Startup Process Status: Current Process Startup status had included a 60% kiln feed cutoff or a 120 minute feed elapsed time. The definition was amended to make sure that the predominant factors for Kiln Operation are Fuel feed and Kiln Feed. This was corrected.</li> <li>-Kiln On Status from SNCR: The system was retrieving a signal from the SNCR system process status. This led the system to believe that any time the SNCR status indicated operation a signal was red by the data acquisition system, indicating that the kiln was in operation. This was corrected.</li> <li>-Process Startup Emissions: When the new data acquisition and handling system was installed, previous data was imported from the old system. This imported data was not flagged correctly by the old system and appeared to indicate that the kiln was not in operation. The data was correctly flagged for periods of startup in accordance with our detailed records.</li> <li>-30 Day Rolling Average Calculation – It was found that the vendor had incorrectly defined the calculation for the 30 Day Rolling</li> </ul>

Paragraph 49 Reporting Requirements	Essroc's Status Report
	<p>Averages. A modification took place to include the ratio of the 30-day rolling sums from both clinker and each applicable pollutant so that the values would be correct.</p> <p>-NOx Data Substitution: The NO and NO2 had been manually placed as "offline" from 1/1/2014 to the installation of the data acquisition system. This did not allow the system to correctly substitute data for invalid hours during the first quarter of 2014. The substitution was flagged properly, thereby correcting the substitution logic. The data was therefore corrected.</p> <p>-Data Invalidation: It was found that the system had erroneously flagged as valid, data which was above the range of the instrumentation by many orders of magnitude. This data was corrected and an error in the logic which prevented the invalidation was also corrected.</p> <p>-H2O Data Substitution: The moisture concentration channel for data substitution had not been placed in the system, this was corrected to resolve for any invalid moisture concentration values in accordance with part 75.</p> <p>-MPC values: Maximum Potential Concentration (MPC) values for the data substitution logic were overestimated. After review of 40 CFR 75, Appendix A, requirements, the value for NOx MPC was derived from the maximum value of all the runs of a previous stack test during normal operation. The SO2 MPC was derived from the maximum value of the first and second quarters of the previous year. The selected values were entered into the data acquisition and handling system and a recalculation was achieved. This corrected the values as they are presented in Attachment G.</p>


Paragraph 49 Reporting Requirements	Essroc's Status Report
	<p>-SNCR Cascade Control: It was found that the control logic for the SNCR, was injecting ammonia into the system , but was not reaching the correct set point of the control logic, which was conservatively set at 2.10 lb/ton. Review of the control logic discovered that the programmer had not scaled one of the signals correctly. This was corrected and the automation loop functions properly.</p>
<p>f. Provide a complete description and status of all actions Essroc has undertaken to comply with the Appendix of this Consent Decree:</p> <p><u>Appendix A: Test &amp; Set for NOx:</u></p> <p><u>Baseline Data Collection:</u> Must start at least 180 days prior to start-up of equipment, unless other period approved by EPA. Baseline Data Collection must include full range of normal kiln operations including changes in raw mix chemistry due to differing clinker manufacture, changes in production levels. Collect data for <b>180 days</b>, or other time period if approved by EPA.</p> <p><u>Baseline Data Report:</u> Submit Baseline Data Report (within <b>45 days</b> of completing the Baseline Data Collection)(App A, Para 7)</p> <p><u>Optimization Protocol:</u> Submit Optimization Protocol to EPA by at least <b>9/30/13</b> for approval. (Not less than 90 days prior to the commencement of optimization) (requirements for the protocol are found in App A, Para 11).</p> <p><u>Continuous Operation:</u> by December 31, 2013.</p> <p><u>Optimization Period:</u> Conduct in accordance with the Optimization Protocol. Shall last no longer than 150 operating days.</p> <p><u>Optimization Report :</u> Submit a report to EPA</p>	<p><u>Appendix A: Test &amp; Set for NOx:</u></p> <p><u>Design Report:</u> EPA and Puerto Rico EQB approved the Design Report on August 7, 2013.</p> <p><u>Baseline Data Report:</u> Essroc submitted the Baseline Data Report on October 17, 2013.</p> <p><u>Optimization Protocol:</u> Essroc submitted the Optimization Protocol to EPA on October 17, 2013.</p> <p><u>Continuous Operation:</u> The SNCR went into shakedown period on January 17, 2014. The shakedown period will last no more than 90 Operating Days. The shakedown period concluded on May 19, 2014.</p> <p><u>Optimization Period:</u> The first of the three molar ratio tests started on May 21, 2014 through May 31, 2014; after an operational shutdown, the test was re-implemented on July1 through 2 of 2014. The ammonia flowrate for the first test was calculated using the previously-determined baseline emission</p>

Paragraph 49 Reporting Requirements	Essroc's Status Report
<p>within 30 days following completion of the Optimization Period.</p> <p><u>Demonstration Period</u> : To commence 7 days after Essroc receives EPA's approval of the final Optimization Report. Demonstration shall last 300 Operating Days. Periodic report to EPA every 3 months.</p> <p><u>Demonstration Report</u> : To be submitted within 60 days of completing the Demonstration Period. Report must propose the 30-Day Rolling Average Emission Limit. EPA can approve the proposed limit or can establish an alternative limit. Essroc can invoke Dispute Resolution if it disagrees with the alternative limit, see Para 74 of the Consent Decree.</p> <p>Appendix B. Not applicable.</p> <p>Appendix C. Not applicable.</p>	<p>rate of 111 lbs NO<sub>x</sub> / hr. This equated to an ammonia injection rate of 21gallons/hr (0.35 gallons per minute). Ammonia was injected via one lance installed at the exit of the Calciner. The actual, uncontrolled NO<sub>x</sub> emission rate during the first test was calculated to be 99.5 lbs / hr. Thus, the actual molar ratio was calculated to be 0.75:1 for this first test. The additional testing ratios were 1:1 and 1.25:1. The ammonia injection rate for the additional molar ratios were 0.55 and 0.67 gallons per minute. The second testing cycle started on July 6 through 30 of 2014 and continued on September 8<sup>th</sup> after a schedule shutdown. The third testing cycle occurred during September 17 through 27 of 2014 and then continued after a scheduled shutdown on November 8<sup>th</sup> through 13<sup>th</sup>.</p> <p><u>Optimization Report</u>: To follow.</p> <p><u>Demonstration Period</u>: To follow.</p> <p><u>Demonstration Report</u>: To follow.</p>
<p>g. Demonstrate compliance with any applicable 30-Day Rolling Average Emission Limits established under Appendix A or B of this Consent Decree.</p>	<p>Attachment G describes the 30-Day Rolling Average values calculated for SO<sub>2</sub> and NO<sub>x</sub> after the bias from the installation of the Data Acquisition and Handling System (DAHS) was corrected. The values demonstrate that the system had been above the 2.3 proposed limit maximum for NO<sub>x</sub>, currently under evaluation, for various days.</p>

Paragraph 49 Reporting Requirements	Essroc's Status Report
h. If applicable, describe the status of actions undertaken pursuant to Section IX (Prohibition on Netting Credits or Offsets from Required Controls) of this Consent Decree.	Not applicable.
i. Describe the status of permit applications and any proposed SIP revisions required under this Consent Decree.	To be implemented at a future date.
j. Describe the status of any operation and maintenance work relating to activities required under this Consent Decree.	Not applicable.
Description of any non-compliance with the requirements of this Consent Decree and an explanation of the violation's likely cause and of the remedial steps taken, or to be taken, to prevent or minimize such violation.	Not applicable.

### III. Responsible Official Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.



Derek Nicholls  
Senior Vice President Technical  
Essroc Cement Corp



## Attachment A

### CEMS Data For Martinsburg Kiln 1

FACILITY	Martinsburg			NOX Limit	SO2 Limit
KILN	1			2.15	1.50
DATE	CLINKER PRODUCTION	NOX RATE	SO2 RATE	NOX 30DRA	SO2 30DRA
	TON/DAY	LB/DAY	LB/DAY	LB/TON-CK	LB/TON-CK
7/1/2014	5618.42	10371.24	2753.78	1.90	0.90
7/2/2014	3496.50	6366.94	3810.79	1.88	0.91
7/3/2014	464.07	2985.41	1646.06	1.87	0.93
7/4/2014	1036.16	5476.68	3530.74	1.90	0.95
7/5/2014	4976.88	13539.65	11351.33	1.93	0.99
7/6/2014	5412.29	10093.25	7983.36	1.94	1.03
7/7/2014	2891.33	4534.27	5616.67	1.94	1.07
7/8/2014	5717.63	8789.42	7439.38	1.94	1.12
7/9/2014	5160.97	7714.75	8834.21	1.93	1.18
7/10/2014	5856.52	9081.07	6538.75	1.92	1.20
7/11/2014	5856.52	8755.20	8498.40	1.91	1.23
7/12/2014	5019.87	7824.17	3732.70	1.91	1.18
7/13/2014	4616.43	9907.20	10177.58	1.92	1.21
7/14/2014	0.00	16.32	0.00	1.91	1.19
7/15/2014	4009.07	8190.07	9632.30	1.92	1.23
7/16/2014	5799.20	8685.60	5323.20	1.89	1.21
7/17/2014	5919.35	9777.60	5647.20	1.89	1.23
7/18/2014	5887.38	8923.20	6225.60	1.87	1.25
7/19/2014	5809.12	8323.20	8654.40	1.86	1.29
7/20/2014	5772.75	8248.80	17404.80	1.84	1.40
7/21/2014	5526.93	8589.60	7953.60	1.83	1.44
7/22/2014	5691.17	8986.03	9546.77	1.80	1.47
7/23/2014	3672.86	7195.10	8009.57	1.78	1.47
7/24/2014	0.00	242.69	121.34	1.78	1.47
7/25/2014	3909.86	8788.20	6481.15	1.79	1.47
7/26/2014	5748.49	9537.60	5467.20	1.78	1.46
7/27/2014	5520.32	8230.46	6263.14	1.76	1.47
7/28/2014	5583.15	9957.60	6751.20	1.76	1.47
7/29/2014	5652.59	9348.00	8976.00	1.75	1.47
7/30/2014	5521.42	8932.80	11623.20	1.74	1.51
7/31/2014	5567.72	12885.60	2229.60	1.76	1.51

8/1/2014	5560.00	8697.60	2044.80	1.75	1.47
8/2/2014	5566.62	9950.40	4408.80	1.74	1.44
8/3/2014	5520.32	10521.60	6842.40	1.72	1.42
8/4/2014	5606.30	13980.00	7046.40	1.72	1.38
8/5/2014	5642.67	12607.20	8800.80	1.73	1.39
8/6/2014	5644.88	10152.00	5904.00	1.74	1.36
8/7/2014	5644.88	10936.80	6362.40	1.75	1.36
8/8/2014	5501.58	12312.72	7484.06	1.78	1.35
8/9/2014	5641.57	13900.80	9664.80	1.81	1.37
8/10/2014	5628.34	10548.00	10728.00	1.83	1.39
8/11/2014	5169.79	10547.06	8434.80	1.84	1.42
8/12/2014	5578.74	12211.20	8680.80	1.85	1.40
8/13/2014	5553.39	10845.60	7936.80	1.85	1.40
8/14/2014	5390.25	10735.20	8649.60	1.85	1.38
8/15/2014	5136.72	11947.30	7016.59	1.88	1.40
8/16/2014	2016.11	5408.06	4241.04	1.90	1.42
8/17/2014	3585.78	7347.65	1001.95	1.92	1.41
8/18/2014	5368.20	9892.80	6679.20	1.93	1.40
8/19/2014	5552.29	10123.20	4332.00	1.95	1.32
8/20/2014	5386.94	10147.20	3957.60	1.96	1.29
8/21/2014	4768.55	9596.66	2753.78	1.98	1.25
8/22/2014	562.17	883.87	560.47	1.97	1.23
8/24/2014	0.00	593.30	540.91	1.98	1.23
8/25/2014	87.08	1772.40	63.84	1.98	1.22
8/26/2014	2825.19	6740.93	2474.83	2.00	1.22
8/27/2014	5353.87	9264.00	5606.40	2.01	1.22
8/28/2014	5573.23	9811.20	5116.80	2.01	1.21
8/29/2014	5201.75	8959.90	6308.28	2.01	1.20
8/30/2014	4413.61	7605.58	3602.02	2.02	1.15
8/31/2014	4943.82	8344.80	2673.60	2.00	1.16
9/1/2014	5644.88	8892.00	4759.20	2.00	1.17
9/2/2014	5597.48	9249.60	8558.40	1.99	1.20
9/3/2014	5629.45	8932.80	7118.40	1.98	1.20
9/4/2014	5644.88	9746.40	7058.40	1.95	1.20
9/5/2014	5551.18	9674.40	5692.80	1.93	1.18
9/6/2014	4925.08	8984.64	4565.23	1.93	1.18
9/7/2014	5342.85	13562.40	1843.20	1.95	1.15
9/8/2014	5252.46	9405.60	4430.40	1.93	1.13
9/9/2014	5309.78	12336.00	6422.40	1.93	1.11
9/10/2014	5217.19	9355.20	6818.40	1.92	1.08
9/11/2014	4909.64	9093.60	1053.60	1.92	1.03
9/12/2014	5517.01	9439.20	3386.40	1.90	0.99
9/13/2014	5733.06	9770.40	3710.40	1.89	0.96

9/14/2014	5533.55	9818.40	3588.00	1.88	0.92
9/15/2014	5633.86	10008.00	5136.00	1.86	0.90
9/16/2014	5588.66	10104.00	8702.40	1.84	0.91
9/17/2014	5597.48	10171.20	11752.80	1.84	0.98
9/18/2014	5619.53	10226.40	9746.40	1.84	1.00
9/19/2014	5701.10	10132.80	7953.60	1.84	1.02
9/20/2014	5423.32	9791.38	7778.06	1.83	1.05
9/21/2014	5604.09	10082.40	8474.40	1.83	1.08
9/22/2014	5594.17	11961.60	9770.40	1.84	1.11
9/23/2014	3489.88	7501.03	5075.14	1.84	1.11
9/24/2014	5210.57	9213.60	7456.80	1.83	1.12
9/25/2014	4983.50	9114.34	9651.31	1.82	1.15
9/26/2014	5517.01	9621.60	7178.40	1.82	1.16
9/27/2014	5565.51	9595.20	7044.00	1.82	1.17
9/28/2014	5539.06	9736.80	4737.60	1.82	1.16
9/29/2014	5584.25	10068.00	1723.20	1.82	1.14
9/30/2014	5675.74	10235.81	3882.38	1.82	1.14
10/1/2014	9248.30	8964.00	2707.20	1.79	1.10
10/2/2014	9787.32	9748.80	3352.80	1.74	1.05
10/3/2014	5536.85	9924.00	5983.20	1.75	1.04
10/4/2014	5524.73	10101.60	3576.00	1.75	1.02
10/5/2014	5198.45	9195.12	2836.94	1.76	1.01
10/6/2014	5101.44	9326.40	4132.80	1.76	1.00
10/7/2014	4957.04	9000.00	10526.40	1.73	1.06
10/8/2014	5168.68	9273.60	8378.40	1.73	1.08
10/9/2014	5259.07	9420.00	4670.40	1.72	1.07
10/10/2014	5292.14	9446.40	6321.60	1.72	1.07
10/11/2014	5230.41	9645.60	8520.00	1.72	1.11
10/12/2014	5405.68	9744.00	4867.20	1.72	1.12
10/13/2014	5480.64	9948.00	7411.20	1.72	1.14
10/14/2014	5415.60	9693.60	5877.60	1.72	1.16
10/15/2014	753.97	2141.93	1431.36	1.73	1.17
10/16/2014	5103.65	9196.80	9208.80	1.73	1.17
10/17/2014	4230.63	8137.92	9850.18	1.73	1.17
10/18/2014	5291.04	9441.60	4053.60	1.73	1.14
10/19/2014	2667.57	5540.83	4815.36	1.73	1.14
10/20/2014	310.85	1220.16	1702.27	1.73	1.14
10/21/2014	5289.94	9477.60	3652.80	1.73	1.11
10/22/2014	5170.89	9559.20	2092.80	1.72	1.06
10/23/2014	5314.19	9710.40	13617.60	1.71	1.11
10/24/2014	3291.47	6696.00	4051.20	1.72	1.10
10/25/2014	5125.70	9144.00	3763.20	1.72	1.06
10/26/2014	5358.28	9768.00	5256.00	1.72	1.05

10/27/2014	5354.97	9736.80	9648.00	1.72	1.07
10/28/2014	4437.86	7971.55	4882.90	1.73	1.07
10/29/2014	5378.12	9777.60	6784.80	1.73	1.11
10/30/2014	5195.14	9439.20	1327.20	1.73	1.10
10/31/2014	5211.67	9439.20	1048.80	1.78	1.11
11/1/2014	5481.74	9880.80	4509.60	1.83	1.16
11/2/2014	5709.91	9842.40	4706.40	1.83	1.15
11/3/2014	5226.00	9727.34	8727.05	1.83	1.18
11/4/2014	5343.95	10166.40	4017.60	1.83	1.19
11/5/2014	5231.52	10008.00	936.00	1.84	1.17
11/6/2014	5187.42	10284.00	3852.00	1.84	1.12
11/7/2014	5379.22	10272.00	4550.40	1.85	1.09
11/8/2014	5410.09	10322.40	5222.40	1.85	1.09
11/9/2014	5460.79	10492.80	3439.20	1.86	1.07
11/10/2014	5481.74	10351.20	3050.40	1.86	1.03
11/11/2014	5508.19	10531.20	3612.00	1.86	1.02
11/12/2014	5539.06	10610.40	4586.40	1.87	1.00
11/13/2014	5533.55	10536.00	7180.80	1.87	1.01
11/14/2014	5491.66	10538.40	2097.60	1.87	0.98
11/15/2014	5522.52	10497.60	6600.00	1.87	0.96
11/16/2014	5362.69	10356.98	4654.58	1.87	0.92
11/17/2014	5546.77	10593.60	4593.60	1.88	0.92
11/18/2014	4740.99	9505.44	7758.91	1.88	0.93
11/19/2014	5058.45	10200.17	4203.14	1.88	0.92
11/20/2014	5411.19	10281.60	3969.60	1.88	0.92
11/21/2014	4843.51	9573.95	2453.15	1.89	0.92
11/22/2014	5521.42	10591.20	2232.00	1.89	0.85
11/23/2014	5531.34	10516.80	4317.60	1.89	0.84
11/24/2014	5492.76	10478.40	6432.00	1.89	0.85
11/25/2014	5481.74	10492.80	6038.40	1.89	0.86
11/26/2014	5515.91	10461.60	4713.60	1.90	0.83
11/27/2014	5560.00	10605.60	6799.20	1.90	0.83
11/28/2014	5540.16	10608.00	8040.00	1.90	0.84
11/29/2014	5560.00	10608.00	10221.60	1.90	0.89
11/30/2014	5560.00	10603.20	9602.40	1.91	0.94
12/1/2014	5414.50	10274.40	6400.80	1.91	0.96
12/2/2014	5026.49	9741.60	16384.80	1.92	1.03
12/3/2014	5381.43	10752.00	5318.40	1.92	1.01
12/4/2014	5294.35	10416.00	5378.40	1.93	1.02
12/5/2014	5382.53	10224.00	7660.80	1.92	1.06
12/6/2014	5291.04	9921.60	6132.00	1.92	1.07
12/7/2014	5361.59	10245.60	6744.00	1.92	1.09
12/8/2014	5388.04	8599.20	6936.00	1.91	1.10

12/9/2014	5248.05	8045.14	8601.12	1.90	1.13
12/10/2014	5388.04	10188.00	6698.40	1.90	1.15
12/11/2014	5234.82	10075.20	6765.60	1.90	1.18
12/12/2014	5123.49	9770.40	10620.00	1.90	1.22
12/13/2014	5109.16	9835.20	7411.20	1.90	1.22
12/14/2014	5265.69	10012.80	5978.40	1.90	1.25
12/15/2014	5125.70	9748.80	7332.00	1.90	1.25
12/16/2014	4854.53	9228.00	6604.80	1.90	1.27
12/17/2014	4303.38	9230.40	3844.80	1.90	1.28
12/18/2014	4343.06	9427.20	4065.60	1.91	1.26
12/19/2014	4340.86	9378.07	4383.72	1.91	1.26
12/20/2014	4142.44	8403.60	1996.56	1.92	1.26
12/21/2014	4871.06	9290.16	4889.81	1.91	1.28
12/22/2014	5073.89	9736.85	2903.47	1.91	1.28
12/23/2014	5388.04	10231.20	9340.80	1.91	1.32
12/24/2014	5385.84	10336.80	11047.20	1.91	1.35
12/25/2014	4588.87	9880.80	7490.40	1.92	1.37
12/26/2014	3719.16	7720.80	3369.60	1.93	1.37
12/27/2014	4190.94	6828.00	5793.60	1.92	1.38
12/28/2014	4423.53	7339.20	6768.00	1.91	1.38
12/29/2014	5233.72	9964.80	2366.40	1.91	1.33
12/30/2014	5373.71	10020.00	1975.20	1.91	1.28
12/31/2014	5234.82	9787.20	1281.60	1.91	1.25

**NOTES:**

A.The first twenty-nine 30-day rolling averages reported on this spreadsheet were calculated from data found on another spreadsheet. Commencing with day thirty, the 30-day rolling averages are calculated on this spreadsheet.

B.Negative numbers for total pounds of pollutant per day are read as a zero (0) when calculating the 30-day rolling average. Negative numbers were validated and represent precision/accuracy limitations of the CEMS at extremely low concentrations.

C. Dates listed above represent all days with Kiln Operation as defined by the Consent Decree

**Attachment B**

### CEMS Data For Logansport Kiln 1

FACILITY	LOGASNPOR			NOX Limit	SO2 Limit
KILN	1			7.00	3.50
DATE	CLINKER PRODUCTION	NOX RATE	SO2 RATE	NOX 30DRA	SO2 30DRA
	TON/DAY	LB/DAY	LB/DAY	LB/TON- CK	LB/TON- CK
7/4/2014	42.99	223.06	65.83	3.21	0.17
7/5/2014	177.47	253.51	68.56	3.28	0.16
7/10/2014	207.23	1464.14	743.13	3.43	0.20
7/11/2014	594.14	3310.25	719.05	3.59	0.24
7/12/2014	660.28	2629.02	591.18	3.62	0.27
7/13/2014	666.89	2722.94	226.95	3.59	0.29
7/14/2014	611.78	2562.60	82.31	3.63	0.29
7/15/2014	595.24	6286.87	215.63	3.85	0.30
7/16/2014	574.30	4741.60	20.90	4.02	0.30
7/17/2014	596.34	4209.32	19.98	4.24	0.30
7/18/2014	525.80	4483.45	581.15	4.40	0.33
7/19/2014	526.90	4806.64	219.98	4.63	0.30
7/20/2014	542.33	3483.66	179.75	4.79	0.31
7/21/2014	613.98	1912.21	74.79	4.78	0.31
7/22/2014	681.22	1709.12	420.27	4.71	0.34
7/23/2014	669.10	1799.03	155.13	4.70	0.35
7/26/2014	144.40	300.78	310.27	4.78	0.37
7/27/2014	252.43	1214.05	859.18	4.87	0.44
7/28/2014	598.55	3824.86	1131.29	5.07	0.52
7/29/2014	578.71	2986.54	1133.18	5.11	0.58
7/30/2014	501.55	4464.69	1017.66	5.21	0.63
7/31/2014	534.62	4841.38	1063.27	5.46	0.71
8/1/2014	593.04	2576.67	1096.30	5.47	0.78
8/2/2014	590.83	2418.45	1097.81	5.48	0.85
8/3/2014	295.42	1658.44	579.20	5.50	0.88
8/4/2014	536.82	4314.64	1024.29	5.69	0.94
8/5/2014	595.24	2131.48	1113.58	5.69	1.02
8/6/2014	645.95	3039.74	1161.73	5.68	1.09
8/7/2014	629.41	2245.48	1178.39	5.58	1.16
8/8/2014	616.19	2970.76	1155.53	5.56	1.19
8/9/2014	500.44	2846.51	979.98	5.56	1.21
8/10/2014	647.05	3117.82	1185.55	5.58	1.25
8/11/2014	655.87	2085.12	1247.35	5.47	1.24
8/12/2014	662.48	1627.60	1289.72	5.34	1.27
8/13/2014	740.75	3710.05	1276.76	5.38	1.31

8/14/2014	368.17	1608.08	657.83	5.41	1.36
8/15/2014	376.99	1858.70	556.33	5.45	1.40
8/16/2014	574.30	4278.32	565.77	5.33	1.43
8/17/2014	634.92	5718.22	565.78	5.37	1.45
8/18/2014	595.24	3846.55	1646.32	5.35	1.55
8/19/2014	611.78	3528.75	2091.29	5.26	1.64
8/20/2014	623.90	2921.80	2073.92	5.12	1.74
8/21/2014	547.84	2483.06	2091.39	5.06	1.85
8/22/2014	548.95	3309.25	2091.44	5.16	1.98
8/23/2014	478.40	3348.92	1943.35	5.33	2.10
8/24/2014	615.08	2860.18	2091.54	5.41	2.23
8/25/2014	457.45	1326.69	1786.57	5.37	2.27
8/26/2014	504.85	1902.22	2091.64	5.33	2.31
8/27/2014	670.20	2013.70	114.44	5.20	2.24
8/28/2014	449.74	1765.83	308.48	5.17	2.21
8/29/2014	584.22	5459.90	1266.55	5.20	2.21
8/30/2014	595.24	4281.31	1022.49	5.15	2.20
8/31/2014	625.00	3377.29	1706.08	5.19	2.24
9/1/2014	631.62	2003.74	289.62	5.15	2.18
9/2/2014	605.16	3192.47	296.18	5.15	2.13
9/3/2014	637.13	2453.46	1274.16	5.01	2.13
9/4/2014	627.21	3645.31	2707.43	5.09	2.22
9/5/2014	565.48	3565.18	194.59	5.14	2.17
9/6/2014	470.68	3151.60	431.81	5.24	2.15
9/7/2014	514.77	1978.37	96.12	5.21	2.10
9/8/2014	512.57	2329.61	41.55	5.18	2.04
9/9/2014	521.39	2693.90	611.82	5.19	2.02
9/10/2014	494.93	3549.98	87.55	5.33	1.97
9/11/2014	443.12	4625.81	195.87	5.58	1.94
9/12/2014	467.38	3122.86	25.81	5.64	1.89
9/13/2014	182.98	923.70	13.84	5.66	1.87
9/14/2014	327.38	4123.47	259.46	5.82	1.86
9/15/2014	406.75	3867.82	1506.33	5.85	1.94
9/16/2014	568.79	3233.06	1807.98	5.72	2.02
9/17/2014	595.24	2361.73	58.98	5.63	1.92
9/18/2014	543.43	2024.33	75.27	5.56	1.81
9/19/2014	348.33	3367.07	154.35	5.68	1.71
9/20/2014	518.08	4174.59	393.85	5.80	1.61
9/21/2014	633.82	2140.75	268.93	5.70	1.48
9/22/2014	616.19	2695.12	207.68	5.61	1.36
9/23/2014	606.27	2588.22	448.10	5.59	1.26
9/24/2014	631.62	1984.48	211.04	5.57	1.14
9/25/2014	617.29	3110.31	154.09	5.61	1.01

9/26/2014	572.09	2602.71	303.84	5.68	1.03
9/27/2014	619.49	3011.65	107.77	5.70	1.01
9/28/2014	608.47	1199.66	197.41	5.42	0.94
9/29/2014	496.04	1383.73	131.94	5.28	0.89
9/30/2014	552.25	2009.24	171.73	5.22	0.80
10/1/2014	184.08	425.81	193.74	5.26	0.82
10/4/2014	77.16	218.57	6.08	5.25	0.82
10/5/2014	462.97	2401.55	3.55	5.31	0.75
10/6/2014	579.81	1837.91	22.83	5.20	0.57
10/7/2014	602.96	1357.80	55.84	5.04	0.56
10/8/2014	445.33	807.77	7.95	4.89	0.53
10/9/2014	14.33	4.15	0.00	4.92	0.54
10/13/2014	192.90	753.83	71.09	4.92	0.56
10/14/2014	482.81	1901.58	57.21	4.88	0.52
10/15/2014	469.58	2047.06	40.09	4.78	0.52
10/16/2014	397.93	2651.04	198.72	4.65	0.52
10/17/2014	460.76	2529.92	74.42	4.61	0.52
10/18/2014	519.18	3899.80	318.23	4.71	0.53
10/19/2014	579.81	3025.80	366.53	4.56	0.53
10/20/2014	631.62	3410.75	46.09	4.45	0.42
10/21/2014	562.17	3679.12	108.99	4.49	0.30
10/22/2014	612.88	3034.86	152.97	4.53	0.31
10/23/2014	245.81	319.47	57.28	4.50	0.32
10/24/2014	423.28	2904.76	15.34	4.45	0.30
10/25/2014	532.41	2303.29	14.48	4.31	0.28
10/26/2014	525.80	4566.11	26.57	4.51	0.26
10/27/2014	521.39	4579.51	4.65	4.68	0.25
10/28/2014	525.80	5157.06	4.29	4.89	0.22
10/29/2014	528.00	4064.45	20.13	5.07	0.21
10/30/2014	531.31	3263.86	36.76	5.11	0.20
10/31/2014	533.51	2861.70	16.55	5.14	0.18
11/1/2014	537.92	3040.89	37.54	5.18	0.18
11/2/2014	541.23	2347.84	25.12	5.29	0.17
11/3/2014	460.76	2566.42	24.94	5.39	0.16
11/4/2014	439.82	2429.45	23.60	5.46	0.15
11/5/2014	418.87	3329.48	45.98	5.58	0.14
11/6/2014	450.84	3923.58	50.63	5.69	0.14
11/7/2014	422.18	3500.63	54.52	5.79	0.14
11/8/2014	462.97	4032.75	173.83	5.99	0.15
11/9/2014	345.02	3990.73	261.33	6.29	0.17
11/11/2014	169.75	921.17	2.78	6.43	0.17
11/12/2014	500.44	3391.47	5.05	6.45	0.17
11/13/2014	403.44	4056.17	9.21	6.58	0.16



11/14/2014	625.00	3096.16	87.09	6.60	0.16
11/15/2014	446.43	2448.97	7.46	6.64	0.16
11/16/2014	328.49	2570.44	39.87	6.67	0.15
11/17/2014	584.22	3169.03	159.36	6.65	0.15
11/18/2014	539.02	3835.54	95.91	6.64	0.14
11/19/2014	524.69	4044.76	99.52	6.74	0.12
11/20/2014	479.50	3190.39	19.20	6.79	0.12
11/21/2014	61.73	476.44	15.12	6.81	0.12
11/22/2014	309.75	1985.52	192.60	6.88	0.12
11/23/2014	548.95	3966.95	203.41	7.00	0.13
11/24/2014	598.55	3371.52	127.80	6.94	0.14
11/25/2014	518.08	5041.05	483.91	7.15	0.17
11/26/2014	79.37	310.67	16.18	7.07	0.17
11/27/2014	469.58	3926.54	281.87	7.05	0.20
11/28/2014	558.87	4571.86	742.06	6.98	0.25
11/29/2014	565.48	3842.99	390.46	6.95	0.28
11/30/2014	556.66	4773.92	580.59	7.05	0.32
12/1/2014	565.48	5939.36	1571.58	7.26	0.43
12/2/2014	553.35	3617.95	956.00	7.29	0.50
12/3/2014	559.97	2488.69	477.76	7.29	0.53
12/4/2014	443.12	3908.92	295.24	7.40	0.55
12/5/2014	497.14	3212.76	538.68	7.43	0.59
12/6/2014	477.30	4245.61	1602.68	7.46	0.70
12/7/2014	502.65	2356.58	725.86	7.32	0.75
12/8/2014	492.73	1878.99	445.48	7.17	0.77
12/9/2014	375.88	1201.05	899.60	7.00	0.83
12/10/2014	369.27	1803.26	777.83	6.83	0.86
12/11/2014	526.90	2206.60	1074.73	6.75	0.92
12/12/2014	519.18	2459.65	1317.21	6.68	1.01
12/13/2014	473.99	2691.32	1458.17	6.55	1.11
12/14/2014	456.35	2071.45	1048.95	6.55	1.19
12/15/2014	462.97	1998.99	2817.58	6.51	1.39
12/16/2014	335.10	1313.21	1017.68	6.42	1.46
12/19/2014	113.54	200.53	64.14	6.42	1.50
12/20/2014	522.49	1711.01	1384.56	6.27	1.60
12/21/2014	348.33	971.02	504.69	6.13	1.65
12/22/2014	263.45	1315.32	66.14	6.08	1.68
12/23/2014	451.94	3289.31	588.40	6.12	1.68
12/24/2014	496.04	3166.66	1067.19	6.12	1.72
12/25/2014	504.85	3823.15	1209.81	6.13	1.80
12/26/2014	529.10	2450.71	124.87	6.09	1.81
12/27/2014	540.13	2238.17	34.14	5.88	1.77
12/28/2014	372.58	1985.44	28.21	5.87	1.73

12/29/2014	475.09	2737.43	40.27	5.79	1.71
12/30/2014	54.01	381.29	0.44	5.69	1.72
12/31/2014	371.48	3652.02	27.35	5.76	1.72

**NOTES:**

A.The first twenty-nine 30-day rolling averages reported on this spreadsheet were calculated from data found on another spreadsheet. Commencing with day thirty, the 30-day rolling averages are calculated on this spreadsheet.

B.Negative numbers for total pounds of pollutant per day are read as a zero (0) when calculating the 30-day rolling average. Negative numbers were validated and represent precision/accuracy limitations of the CEMS at extremely low concentrations.

D. Dates listed above represent all days with Kiln Operation as defined by the Consent Decree

## Attachment C

### CEMS Data For Logansport Kiln 2

FACILITY	LOGASNPOR			NOX Limit	SO2 Limit
KILN	2			7.00	4.80
DATE	CLINKER PRODUCTION	NOX RATE	SO2 RATE	NOX 30DRA	SO2 30DRA
	TON/DAY	LB/DAY	LB/DAY	LB/TON-CK	LB/TON-CK
7/1/2014	186.29	436.65	103.59	3.38	8.90
7/2/2014	391.32	1685.21	311.42	3.43	8.77
7/3/2014	427.69	901.36	204.79	3.39	8.50
7/4/2014	456.35	748.95	214.51	3.35	8.32
7/5/2014	437.61	845.36	434.26	3.28	8.12
7/6/2014	439.82	1210.46	154.43	3.27	7.87
7/7/2014	353.84	1689.83	110.17	3.33	7.69
7/8/2014	429.90	1923.35	206.49	3.40	7.49
7/9/2014	334.00	2827.34	185.51	3.58	7.28
7/10/2014	25.35	39.74	34.57	3.60	7.17
7/11/2014	348.33	2464.44	830.39	3.68	6.80
7/12/2014	422.18	1956.18	839.10	3.71	6.45
7/13/2014	438.72	2888.97	1309.51	3.81	6.17
7/14/2014	419.98	2865.23	549.70	3.94	5.67
7/15/2014	384.70	3033.99	302.60	4.07	5.42
7/16/2014	375.88	1581.40	11.47	4.06	5.01
7/17/2014	384.70	2112.64	255.72	4.13	4.43
7/18/2014	321.87	1427.35	1430.57	4.18	4.25
7/19/2014	320.77	1462.16	865.74	4.23	3.88
7/20/2014	345.02	1495.99	1454.82	4.26	3.55
7/21/2014	368.17	2061.14	3182.26	4.31	3.56
7/22/2014	7.72	9.89	7.35	4.36	3.50
7/23/2014	401.24	1827.66	2008.38	4.44	3.54
7/24/2014	516.98	2229.29	4167.64	4.44	3.44
7/25/2014	508.16	2058.73	4437.54	4.42	3.52
7/26/2014	446.43	1678.87	3154.95	4.42	3.12
7/27/2014	405.65	1853.18	3051.91	4.43	3.28
7/28/2014	526.90	2103.86	3311.35	4.41	3.41
7/29/2014	529.10	2054.81	1434.74	4.46	3.21
7/30/2014	524.69	1974.18	1340.01	4.48	3.13
7/31/2014	544.54	2149.17	1272.65	4.49	3.13

8/1/2014	205.03	330.93	466.92	4.45	3.20
8/4/2014	206.13	515.29	246.43	4.50	3.26
8/5/2014	214.95	813.03	892.60	4.60	3.39
8/8/2014	87.08	368.94	226.49	4.71	3.48
8/9/2014	381.40	1638.81	2475.71	4.77	3.72
8/10/2014	529.10	1965.84	4660.54	4.72	4.07
8/11/2014	522.49	1918.61	6661.35	4.68	4.62
8/12/2014	412.26	1829.86	7247.23	4.56	5.22
8/13/2014	492.73	2298.80	6601.84	4.57	5.58
8/14/2014	436.51	2167.27	4322.20	4.51	5.84
8/15/2014	422.18	2248.35	2991.57	4.53	6.02
8/16/2014	389.11	1291.49	2577.53	4.42	6.16
8/17/2014	410.06	1082.30	2580.02	4.27	6.34
8/18/2014	429.90	964.55	2977.06	4.07	6.54
8/19/2014	164.24	339.83	524.45	4.04	6.71
8/21/2014	220.46	366.18	372.47	3.94	6.81
8/22/2014	375.88	1229.05	2924.30	3.91	6.91
8/23/2014	308.64	1309.19	2170.85	3.90	7.04
8/24/2014	356.04	1974.18	1430.57	3.94	7.03
8/25/2014	358.25	852.76	1725.32	3.83	6.91
8/26/2014	368.17	1362.01	2836.02	3.83	6.93
8/27/2014	388.01	1445.07	1689.95	3.80	6.91
8/28/2014	87.08	320.77	206.54	3.78	6.83
8/30/2014	334.00	991.35	380.15	3.74	6.57
8/31/2014	425.49	1386.23	872.62	3.72	6.37
9/1/2014	446.43	1139.87	633.18	3.64	6.13
9/2/2014	91.49	84.12	19.44	3.60	6.07
9/9/2014	130.07	422.64	150.22	3.58	6.19
9/10/2014	182.98	682.47	206.83	3.58	6.28
9/11/2014	264.55	889.17	140.03	3.55	6.35
9/12/2014	248.02	638.72	35.76	3.57	6.28
9/13/2014	268.96	1056.08	25.06	3.60	6.21
9/14/2014	337.30	1925.37	48.87	3.67	6.05
9/15/2014	370.37	2796.52	633.65	3.80	5.92
9/16/2014	134.48	1192.45	1072.86	3.85	5.93
9/17/2014	174.16	478.66	69.77	3.84	5.67
9/18/2014	317.46	946.84	474.55	3.82	5.13
9/19/2014	136.69	857.85	347.27	3.83	4.53
9/21/2014	231.48	915.83	18.69	3.79	3.91
9/22/2014	353.84	1345.16	102.90	3.73	3.47
9/23/2014	435.41	2065.76	840.47	3.70	3.21
9/24/2014	379.19	3216.37	427.48	3.93	2.97
9/25/2014	363.76	4024.29	281.85	4.29	2.72

9/26/2014	347.22	4289.65	441.74	4.71	2.45
9/27/2014	359.35	4574.00	714.89	5.09	2.42
9/28/2014	354.94	4053.06	1544.27	5.43	2.52
9/29/2014	345.02	4251.78	2077.26	5.79	2.43
9/30/2014	357.15	2656.12	546.08	5.91	2.23
10/1/2014	105.82	634.07	83.04	5.92	2.14
10/2/2014	234.79	1342.90	588.22	6.06	2.04
10/3/2014	396.83	2198.94	231.04	6.14	1.73
10/4/2014	112.43	586.53	14.31	6.24	1.59
10/6/2014	166.45	513.41	13.62	6.20	1.55
10/7/2014	317.46	2467.44	244.83	6.39	1.54
10/8/2014	383.60	3789.89	1188.47	6.71	1.58
10/9/2014	394.62	3437.09	190.15	7.03	1.54
10/10/2014	367.07	3300.59	642.89	7.18	1.56
10/11/2014	273.37	2913.96	743.64	7.35	1.61
10/12/2014	327.38	4469.96	1340.60	7.66	1.71
10/13/2014	330.69	3131.85	1472.09	7.85	1.84
10/14/2014	358.25	3883.43	1852.89	8.11	2.02
10/15/2014	134.48	431.71	56.71	8.17	2.06
10/17/2014	128.97	588.72	32.30	8.21	2.10
10/18/2014	350.53	1568.19	378.99	8.09	2.08
10/19/2014	297.62	1986.49	1417.50	8.03	2.08
10/22/2014	199.52	579.26	10.46	8.01	2.07
10/23/2014	394.62	2596.61	37.85	8.13	2.00
10/24/2014	419.98	2017.09	14.42	8.01	1.90
10/25/2014	405.65	1359.36	192.02	7.90	1.89
10/26/2014	208.33	687.80	11.40	7.96	1.91
10/27/2014	309.75	1724.95	45.77	8.03	1.85
10/28/2014	415.5671	2085.451534	215.85888	7.88	1.81
10/29/2014	322.9739	1901.33475	67.286431	7.68	1.80
10/30/2014	373.6797	2943.391114	443.26849	7.51	1.79
10/31/2014	390.2142	4012.551562	817.14272	7.42	1.80
11/1/2014	394.6234	4163.375913	598.42984	7.40	1.69
11/2/2014	410.0556	4401.681567	1267.8864	7.37	1.59
11/3/2014	382.4981	4588.275143	3333.9059	7.55	1.89
11/4/2014	137.7875	1170.429228	248.02457	7.59	1.90
11/6/2014	228.1761	1105.016983	102.36001	7.56	1.85
11/7/2014	349.4291	1915.723255	245.57654	7.57	1.86
11/8/2014	389.1119	1853.196474	992.59821	7.49	1.91
11/9/2014	390.2142	1979.681319	835.36347	7.47	1.95
11/10/2014	378.0889	1814.003049	1425.0746	7.35	2.05
11/11/2014	82.6725	554.2133269	1.0240183	7.25	1.99
11/13/2014	168.6519	493.4920714	2037.854	7.11	2.24

11/14/2014	488.3189	1548.677808	9642.3311	6.83	3.16
11/15/2014	62.8311	75.36110642	412.21947	6.68	3.20
11/20/2014	104.7185	336.1454299	558.06994	6.38	3.19
11/21/2014	378.0889	1486.270047	7654.6918	6.17	3.86
11/22/2014	383.6004	1372.117911	8341.206	5.87	4.56
11/23/2014	400.1349	2040.511096	7815.5367	5.88	5.26
11/24/2014	430.9993	1615.359314	11648.901	5.80	6.30
11/25/2014	465.1706	2124.633906	9041.2854	5.79	7.12
11/26/2014	449.7384	2194.243113	10284.477	5.72	7.90
11/27/2014	456.3522	2348.959514	8030.5966	5.75	8.49
11/28/2014	464.0683	2236.366021	7408.2504	5.68	9.15
11/29/2014	464.0683	2375.772261	9180.7982	5.69	10.00
11/30/2014	316.3601	1650.193084	5567.3408	5.77	10.62
12/1/2014	4.4092	14.94064026	12.129667	5.82	10.84
12/2/2014	283.2911	1522.080213	1728.3958	5.81	11.03
12/3/2014	365.9636	2643.734191	1058.756	5.90	11.17
12/4/2014	297.621	1664.162732	175.38377	5.89	11.21
12/5/2014	306.4394	2768.125528	1016.4446	5.91	11.35
12/6/2014	324.0762	3152.672434	1229.2162	5.86	11.47
12/7/2014	264.552	1808.664183	569.3031	5.70	11.62
12/10/2014	178.5726	764.6745627	808.77452	5.45	11.86
12/11/2014	459.6591	2023.109104	6519.1824	5.14	12.10
12/12/2014	467.3752	2165.000667	8286.6246	5.06	12.51
12/13/2014	391.3165	1521.830042	9900.7872	5.02	13.29
12/15/2014	358.2475	1664.997743	6793.0523	4.99	13.93
12/16/2014	476.1936	2133.394726	9510.1126	4.98	14.66
12/17/2014	382.4981	1662.363752	7012.7581	4.95	15.28
12/18/2014	397.9303	1776.642687	7440.6723	4.94	15.85
12/19/2014	442.0223	1826.844193	7981.488	4.89	16.07
12/20/2014	379.1912	1958.876241	4650.7217	4.93	16.00
12/21/2014	152.1174	339.8793376	69.420245	4.97	15.59
12/22/2014	314.1555	1935.063744	1738.1478	5.03	15.35
12/23/2014	302.0302	2443.41534	1612.7657	5.14	15.16
12/24/2014	44.092	170.5009164	134.92768	5.17	14.93
12/25/2014	284.3934	2348.910783	1193.2939	5.32	14.38
12/26/2014	296.5187	2162.683273	1161.2226	5.38	13.87
12/27/2014	5.5115	2.524833553	0.1099294	5.45	13.29
12/28/2014	273.3704	1412.063124	483.67353	5.49	12.66
12/29/2014	362.6567	1957.398028	1984.6749	5.51	11.90
12/30/2014	287.7003	1588.373107	894.06304	5.53	11.35
12/31/2014	229.2784	1050.238641	67.478126	5.54	10.84

NOTES:

A.The first twenty-nine 30-day rolling averages reported on this spreadsheet were calculated from data found on another spreadsheet. Commencing with day thirty, the 30-day rolling averages are calculated on this spreadsheet.

B.Negative numbers for total pounds of pollutant per day are read as a zero (0) when calculating the 30-day rolling average. Negative numbers were validated and represent precision/accuracy limitations of the CEMS at extremely low concentrations.

C. SO<sub>2</sub> limit is applicable Dec.31.2014; Data collected from this data will be summed to the 30 day rolling average value as defined in the Consent Order.

D. Dates listed above represent all days with Kiln Operation as defined by the Consent Decree

**Attachment D**

**CEMS Data For Speed Kiln 1**

**Kiln did not operate during this period.**



## Attachment E

### CEMS Data For Speed Kiln 2

FACILITY	SPEED			NOX Limit	SO2 Limit
KILN	2.00			2.10	1.70
DATE	CLINKER PRODUCTION	NOX RATE	SO2 RATE	NOX 30DRA	SO2 30DRA
	TON/DAY	LB/DAY	LB/DAY	LB/TON-CK	LB/TON-CK
7/1/2014	2248.69	4457.20	2525.10	1.80	1.30
7/2/2014	2238.77	4196.00	2654.00	1.82	1.30
7/3/2014	2248.69	4437.50	3616.20	1.83	1.30
7/4/2014	2223.34	4442.20	2748.40	1.83	1.30
7/5/2014	2247.59	4523.20	2968.30	1.83	1.31
7/6/2014	2003.98	3953.60	2834.90	1.84	1.32
7/7/2014	2195.78	4311.70	2934.90	1.84	1.31
7/8/2014	2121.93	3957.40	3165.50	1.87	1.31
7/9/2014	1994.06	3804.10	2503.50	1.87	1.32
7/10/2014	2147.28	3807.50	2817.70	1.87	1.32
7/11/2014	2221.13	3812.20	3413.00	1.88	1.34
7/12/2014	2218.93	4074.20	3256.90	1.90	1.34
7/13/2014	2244.28	3853.80	2577.40	1.90	1.34
7/14/2014	2062.40	2887.00	2550.20	1.90	1.32
7/15/2014	2216.73	4075.10	3295.80	1.91	1.33
7/16/2014	1449.52	3745.90	2368.30	1.93	1.34
7/17/2014	2204.60	4804.20	4515.50	1.94	1.36
7/18/2014	561.07	1163.50	781.00	1.93	1.36
7/19/2014	2113.11	4174.40	2110.70	1.93	1.35
7/20/2014	2213.42	4148.90	3114.70	1.93	1.36
7/21/2014	2185.86	3966.20	2966.70	1.93	1.37
7/22/2014	2095.47	3731.70	4579.10	1.92	1.40
7/23/2014	2235.46	4624.30	4992.00	1.93	1.44
7/24/2014	2224.44	4151.80	3616.00	1.92	1.46
7/25/2014	2130.75	3928.70	3811.60	1.92	1.47
7/26/2014	1622.59	3160.70	2556.30	1.91	1.46
7/27/2014	2194.68	4407.90	4591.90	1.91	1.49
7/28/2014	2153.89	3405.90	3995.10	1.90	1.50
7/29/2014	2130.75	3678.50	4028.30	1.89	1.52
7/30/2014	2171.53	4304.90	4293.00	1.89	1.54
7/31/2014	2138.46	4206.70	2707.00	1.89	1.55
8/1/2014	2175.94	4165.00	2176.80	1.89	1.54
8/2/2014	2139.56	3638.60	2464.40	1.88	1.53

8/3/2014	2178.14	3961.20	2399.40	1.88	1.52
8/4/2014	2159.41	3468.60	2893.90	1.86	1.52
8/5/2014	2174.84	3479.00	2623.70	1.85	1.52
8/6/2014	2140.67	3580.00	2870.00	1.84	1.52
8/7/2014	2078.94	3489.40	2878.60	1.83	1.51
8/8/2014	2065.71	3556.90	3102.60	1.83	1.52
8/9/2014	880.74	1551.70	1501.90	1.83	1.53
8/10/2014	2155.00	3547.90	2636.50	1.83	1.52
8/11/2014	2131.85	4039.80	2581.30	1.83	1.51
8/12/2014	2134.05	3955.00	2072.10	1.83	1.50
8/13/2014	2177.04	3787.60	2615.20	1.85	1.50
8/14/2014	2197.99	3669.90	4254.90	1.84	1.52
8/15/2014	1954.38	2989.10	3639.40	1.81	1.53
8/16/2014	546.74	1257.40	1417.30	1.80	1.52
8/17/2014	1929.03	4055.80	1315.90	1.81	1.49
8/18/2014	2008.39	2140.00	3190.40	1.78	1.51
8/19/2014	777.12	841.20	1571.40	1.77	1.52
8/23/2014	0.00	0.00	2.10	1.75	1.47
8/24/2014	395.73	1035.20	2918.10	1.75	1.50
8/25/2014	2043.66	3424.90	3499.50	1.74	1.51
8/26/2014	2088.86	4100.80	3324.80	1.74	1.49
8/27/2014	1968.71	4309.50	4073.30	1.76	1.49
8/28/2014	1828.72	4286.90	2988.20	1.79	1.48
8/29/2014	305.34	3935.70	2952.20	1.85	1.51
8/30/2014	523.59	4349.60	2999.50	1.92	1.57
8/31/2014	2087.76	3834.80	2865.00	1.91	1.59
9/1/2014	2139.56	3485.40	2195.40	1.91	1.58
9/2/2014	2197.99	2916.80	2661.80	1.89	1.59
9/3/2014	2066.81	4574.30	2321.70	1.92	1.58
9/4/2014	2109.80	3361.90	1830.80	1.92	1.56
9/5/2014	2063.51	3511.00	4533.80	1.92	1.60
9/6/2014	2072.32	3138.60	3036.10	1.91	1.61
9/7/2014	2134.05	3821.30	3810.10	1.91	1.62
9/8/2014	2134.05	4496.20	4200.10	1.92	1.64
9/9/2014	2202.40	4594.90	4718.50	1.95	1.68
9/10/2014	2195.78	3977.10	2415.30	1.94	1.67
9/11/2014	2140.67	3561.00	1246.50	1.93	1.65
9/12/2014	2214.52	3647.00	1220.40	1.93	1.62
9/13/2014	1834.23	3671.20	1773.80	1.94	1.58
9/14/2014	2146.18	3623.60	3521.90	1.95	1.57
9/15/2014	2105.39	3437.40	3765.20	1.93	1.57
9/16/2014	2078.94	3547.90	2365.90	1.91	1.59
9/17/2014	2107.60	3633.20	1485.70	1.94	1.55

9/18/2014	1959.89	4360.10	2336.10	1.97	1.53
9/19/2014	1872.81	3505.50	1925.40	1.96	1.51
9/20/2014	2147.28	3686.00	1968.20	1.95	1.49
9/21/2014	2107.60	3645.90	1883.20	1.94	1.46
9/22/2014	2113.11	3671.10	2593.00	1.94	1.45
9/23/2014	2171.53	3755.50	2428.20	1.92	1.40
9/24/2014	1442.91	3723.90	1390.40	1.95	1.38
9/25/2014	2065.71	3479.80	1925.40	1.94	1.36
9/26/2014	1403.23	3743.50	825.00	1.95	1.31
9/27/2014	1374.57	2862.60	915.30	1.94	1.29
9/28/2014	956.80	2515.10	1834.30	1.89	1.25
9/29/2014	1344.81	3776.70	2171.90	1.86	1.22
9/30/2014	1529.99	3746.80	2385.80	1.87	1.23
10/1/2014	1770.29	3248.70	2283.30	1.88	1.24
10/2/2014	1977.53	3503.00	2806.80	1.90	1.24
10/3/2014	794.76	1560.60	1240.60	1.89	1.25
10/4/2014	10304.30	3433.30	1655.60	1.65	1.09
10/5/2014	1987.45	3498.80	1246.30	1.65	1.04
10/6/2014	1957.68	3381.00	1909.40	1.66	1.03
10/7/2014	2076.73	3319.90	2284.30	1.65	1.00
10/8/2014	1133.16	2791.70	967.30	1.65	0.97
10/9/2014	681.22	1452.60	858.10	1.64	0.93
10/10/2014	1886.04	3171.90	1836.50	1.64	0.92
10/11/2014	1143.09	2245.70	1137.80	1.64	0.94
10/12/2014	419.98	801.80	454.30	1.64	0.95
10/13/2014	0.00	0.00	10.80	1.63	0.95
10/14/2014	849.87	1391.00	2238.20	1.63	0.95
10/15/2014	1868.40	3217.20	1255.00	1.63	0.91
10/16/2014	2112.01	3233.40	1573.40	1.63	0.90
10/17/2014	2020.52	2942.80	2936.10	1.62	0.92
10/18/2014	1940.05	3385.20	3247.10	1.60	0.94
10/19/2014	2010.60	3413.80	1927.70	1.59	0.94
10/20/2014	1999.57	3507.60	2732.10	1.59	0.96
10/21/2014	1995.16	3349.10	2501.90	1.59	0.97
10/22/2014	2012.80	4034.20	2194.10	1.60	0.96
10/23/2014	1679.91	3013.40	2159.70	1.60	0.97
10/24/2014	1888.24	3306.90	1990.70	1.58	0.97
10/25/2014	2038.15	3515.80	2220.50	1.58	0.98
10/26/2014	1892.65	3875.20	2134.20	1.57	0.99
10/27/2014	1945.56	3387.40	2744.50	1.57	1.01
10/28/2014	791.45	1347.90	1583.10	1.55	1.01
10/29/2014	1824.31	3497.00	1782.60	1.53	1.00
10/30/2014	297.62	710.10	532.40	1.51	0.98

10/31/2014	0.00	0.00	0.00	1.50	0.97
11/1/2014	0.00	0.00	0.00	1.49	0.96
11/2/2014	0.00	0.00	0.00	1.48	0.95
11/3/2014	0.00	0.00	1.80	1.77	1.15
11/4/2014	844.36	2758.40	1950.80	1.81	1.20
11/5/2014	2129.64	3619.50	1609.80	1.81	1.19
11/6/2014	1960.99	3474.70	4609.50	1.81	1.25
11/7/2014	1645.73	2824.80	1226.80	1.79	1.24
11/8/2014	2009.49	3424.70	3799.10	1.78	1.27
11/9/2014	1954.38	3338.10	2434.40	1.78	1.28
11/10/2014	1954.38	3231.30	4506.30	1.77	1.34
11/11/2014	1991.86	3244.10	3659.60	1.76	1.36
11/12/2014	2107.60	3541.90	4050.00	1.76	1.39
11/13/2014	2171.53	3649.50	3606.80	1.76	1.38
11/14/2014	2189.17	3567.40	4350.00	1.75	1.44
11/15/2014	2150.59	3402.40	4012.20	1.76	1.49
11/16/2014	2086.65	3027.80	3365.80	1.76	1.49
11/17/2014	2104.29	2986.40	5376.40	1.74	1.53
11/18/2014	2119.72	2981.30	2772.30	1.73	1.55
11/19/2014	2147.28	3432.10	2397.70	1.72	1.53
11/20/2014	683.43	1260.20	1189.40	1.73	1.55
11/21/2014	2085.55	3205.00	1931.30	1.71	1.54
11/22/2014	2102.09	3365.80	1609.30	1.70	1.52
11/23/2014	2108.70	3652.30	1999.40	1.70	1.51
11/24/2014	2054.69	3056.40	2031.10	1.69	1.50
11/25/2014	1689.83	3150.70	1946.90	1.68	1.51
11/26/2014	2113.11	3323.90	1846.90	1.67	1.48
11/27/2014	2215.62	3616.50	1246.30	1.67	1.43
11/28/2014	2201.29	3583.90	1972.70	1.66	1.43
11/29/2014	2156.10	3532.00	1846.60	1.65	1.40
11/30/2014	2250.90	3325.40	1778.40	1.65	1.37
12/1/2014	1614.87	2396.00	1881.60	1.64	1.37
12/2/2014	1569.68	2738.50	1452.60	1.64	1.36
12/3/2014	2032.64	3352.10	2652.10	1.64	1.35
12/4/2014	2003.98	3089.20	3909.20	1.62	1.36
12/5/2014	2056.89	3416.60	3588.60	1.62	1.40
12/6/2014	1826.51	3279.90	2871.40	1.62	1.37
12/7/2014	1742.74	3234.10	2359.50	1.62	1.39
12/8/2014	1889.34	3334.40	3168.20	1.62	1.38
12/9/2014	1153.01	1797.60	1545.40	1.62	1.38
12/10/2014	0.00	0.00	0.00	1.62	1.35
12/11/2014	0.00	0.00	0.00	1.62	1.33
12/12/2014	0.00	0.00	0.00	1.61	1.31

12/13/2014	0.00	0.00	0.00	1.61	1.29
12/14/2014	311.95	834.90	1643.90	1.62	1.29
12/15/2014	2084.45	3639.60	3183.30	1.62	1.27
12/16/2014	2089.96	3270.00	3448.10	1.63	1.27
12/17/2014	1931.23	3741.60	2040.60	1.65	1.21
12/18/2014	2128.54	3698.30	2582.40	1.67	1.20
12/19/2014	2131.85	4005.10	2123.30	1.68	1.20
12/20/2014	2010.60	3424.90	2203.80	1.68	1.19
12/21/2014	2078.94	3576.50	2823.90	1.68	1.21
12/22/2014	2119.72	3686.50	2181.60	1.69	1.22
12/23/2014	2168.22	3884.90	2341.20	1.69	1.22
12/24/2014	2160.51	3915.40	2494.00	1.71	1.23
12/25/2014	2119.72	3763.80	1613.90	1.70	1.21
12/26/2014	2170.43	3714.30	3427.40	1.71	1.24
12/27/2014	2152.79	2925.10	3048.10	1.70	1.28
12/28/2014	2157.20	3812.90	2946.10	1.70	1.30
12/29/2014	1073.64	2013.40	1096.00	1.71	1.31
12/30/2014	2148.38	3575.00	4541.10	1.72	1.37
12/31/2014	2057.99	3529.50	3862.10	1.73	1.40

NOTES:

A.The first twenty-nine 30-day rolling averages reported on this spreadsheet were calculated from data found on another spreadsheet. Commencing with day thirty, the 30-day rolling averages are calculated on this spreadsheet.

B.Negative numbers for total pounds of pollutant per day are read as a zero (0) when calculating the 30-day rolling average. Negative numbers were validated and represent precision/accuracy limitations of the CEMS at extremely low concentrations.

C. Dates listed above represent all days with Kiln Operation as defined by the Consent Decree

D. Speed's kiln 1 did not operate during this period.

# Attachment F

## CEMS Data For Nazareth Kiln 1

FACILITY	NAZARETH			NOX Limit	SO2 Limit
KILN	1			2.30	1.80
DATE	CLINKER PRODUCTION	NOX RATE	SO2 RATE	NOX 30DRA	SO2 30DRA
	TON/DAY	LB/DAY	LB/DAY	LB/TON- CK	LB/TON- CK
7/1/14	3840.39	12533.00	4557.40	2.15	1.18
7/8/14	0.00	1.20	2.90	2.15	1.18
7/9/14	276.68	1915.20	1234.70	2.15	1.19
7/10/14	1287.48	3088.40	668.20	2.15	1.19
7/12/14	0.00	291.20	414.90	2.16	1.19
7/13/14	153.22	1185.00	931.90	2.19	1.20
7/14/14	750.66	3766.50	884.30	2.23	1.21
7/15/14	44.09	131.10	6.10	2.25	1.22
7/17/14	0.00	162.40	114.20	2.25	1.23
7/18/14	2323.63	5098.70	1310.90	2.26	1.22
7/19/14	3664.02	7242.50	1130.70	2.25	1.19
7/20/14	3852.51	4462.10	1459.20	2.21	1.14
7/21/14	3677.25	5134.70	1956.40	2.17	1.11
7/22/14	3668.43	5706.50	1898.60	2.16	1.08
7/23/14	4151.23	5471.60	5227.60	2.14	1.08
7/24/14	4043.21	5912.10	4613.30	2.14	1.08
7/25/14	1977.51	6294.60	3975.80	2.20	1.08
7/26/14	3869.05	11666.60	4085.60	2.27	1.04
7/27/14	4425.71	7453.10	2439.00	2.23	1.02
7/28/14	2318.12	4747.70	1940.60	2.23	0.99
7/29/14	3983.69	7389.60	4745.80	2.19	0.98
7/30/14	4865.52	9049.30	6198.60	2.18	0.98
7/31/14	4164.46	6280.60	3993.70	2.14	0.92
8/1/14	4510.58	6513.70	5557.50	2.06	0.89
8/2/14	4745.37	10190.10	7062.60	2.05	0.92
8/3/14	4899.69	8788.40	6528.40	2.03	0.95
8/4/14	4118.17	7010.80	5674.10	2.01	0.98
8/5/14	3690.48	6944.30	6483.10	1.99	1.04
8/6/14	4572.31	8649.50	7081.70	1.97	1.09
8/7/14	4667.11	8698.70	6363.40	1.94	1.11
8/8/14	4667.11	9012.50	6494.40	1.88	1.12

8/9/14	4158.95	10286.90	7010.50	1.91	1.15
8/10/14	3667.33	8430.20	5487.00	1.91	1.15
8/13/14	0.00	1.30	0.20	1.90	1.16
8/14/14	1225.75	5872.20	3446.00	1.94	1.18
8/15/14	4419.09	9095.20	6252.10	1.93	1.18
8/16/14	4269.18	10004.70	8514.60	1.93	1.21
8/17/14	4675.93	11837.20	9154.60	1.95	1.25
8/18/14	3907.63	8077.40	5288.30	1.96	1.25
8/19/14	3509.70	7113.70	5376.40	1.95	1.27
8/20/14	4529.32	13387.60	3988.10	1.99	1.29
8/21/14	4292.33	10354.70	6364.70	2.03	1.32
8/22/14	311.95	883.30	427.30	2.06	1.35
8/23/14	0.00	484.50	301.30	2.08	1.38
8/24/14	519.18	2314.20	970.20	2.12	1.39
8/25/14	950.18	3967.80	2894.70	2.17	1.41
8/26/14	4695.77	12851.70	3133.90	2.17	1.37
8/27/14	4706.79	13431.80	4952.90	2.17	1.37
8/28/14	4573.41	11720.00	5004.70	2.21	1.39
8/29/14	4098.32	8276.50	4261.40	2.21	1.39
8/30/14	4749.78	8590.20	6054.80	2.20	1.39
8/31/14	4760.80	7554.60	6414.50	2.19	1.39
9/1/14	4735.45	7367.10	6431.10	2.19	1.41
9/2/14	4339.73	10373.90	6992.30	2.23	1.42
9/3/14	4667.11	11665.20	4916.20	2.24	1.40
9/4/14	4559.08	10674.00	2944.30	2.27	1.38
9/5/14	4238.32	7277.00	3119.60	2.27	1.35
9/6/14	4397.05	4719.00	4659.20	2.23	1.33
9/7/14	4634.04	7097.10	4766.70	2.22	1.30
9/8/14	4066.36	7147.90	5333.60	2.21	1.30
9/9/14	4589.95	6828.50	3111.90	2.20	1.27
9/10/14	2250.88	3654.80	1596.50	2.17	1.24
9/11/14	4134.70	5893.10	2864.90	2.14	1.21
9/12/14	4535.93	8931.90	4054.10	2.13	1.20
9/13/14	4206.35	6750.10	3674.50	2.08	1.17
9/14/14	3698.19	6172.30	3764.80	2.07	1.16
9/15/14	3332.23	6397.20	2108.40	2.06	1.11
9/16/14	3658.51	6116.60	2426.20	2.02	1.06
9/17/14	3655.20	6633.50	2175.20	2.02	1.03
9/18/14	4423.50	8754.70	5100.90	2.01	1.02
9/19/14	2679.67	5325.50	3688.60	1.98	1.04
9/20/14	264.55	1742.90	1510.30	1.97	1.03
9/21/14	4020.06	8256.00	4184.80	1.97	1.03
9/22/14	4415.78	8863.90	5360.90	1.97	1.03

9/23/14	3762.13	7674.10	4984.60	1.96	1.04
9/24/14	1976.41	3762.60	2504.10	1.94	1.03
9/27/14	0.00	2011.80	2.40	1.92	1.04
9/28/14	1050.49	11159.10	2901.00	1.97	1.06
9/29/14	2825.18	6908.70	3589.30	1.96	1.06
9/30/14	2679.67	6259.00	1972.40	1.96	1.05
10/1/14	3501.98	6931.20	2104.60	1.97	1.03
10/2/14	3612.21	8665.40	4053.50	2.00	1.02
10/3/14	3741.18	7335.10	2842.10	2.02	0.99
10/4/14	4032.19	8023.70	4454.10	2.00	0.97
10/5/14	4002.43	8186.20	7091.00	1.98	1.00
10/6/14	3966.05	9308.50	6665.20	1.98	1.04
10/7/14	3905.42	8095.60	4623.90	2.00	1.06
10/8/14	4001.32	8492.30	5710.80	2.04	1.07
10/9/14	4169.97	9868.60	1554.50	2.08	1.05
10/10/14	2970.68	6522.90	848.00	2.09	1.01
10/11/14	557.76	1741.30	784.10	2.13	1.03
10/12/14	3472.22	7210.90	2444.00	2.14	1.03
10/13/14	4039.90	8256.40	3644.90	2.17	1.04
10/14/14	3898.81	8109.10	5660.70	2.17	1.06
10/15/14	4175.49	8501.30	6329.20	2.19	1.09
10/16/14	4114.86	7455.40	4862.60	2.19	1.10
10/17/14	4075.18	6424.60	3737.20	2.18	1.10
10/18/14	4093.92	6503.70	2996.00	2.17	1.10
10/19/14	3907.63	6159.70	3121.40	2.16	1.11
10/20/14	4173.28	6576.30	5055.60	2.14	1.11
10/21/14	4088.40	6464.40	6262.80	2.13	1.12
10/22/14	4067.46	7513.30	7537.80	2.10	1.14
10/23/14	3810.63	7643.70	7505.00	2.10	1.18
10/24/14	4167.77	8204.50	7042.90	2.10	1.19
10/25/14	2863.76	6158.40	6119.00	2.10	1.22
10/26/14	4108.25	8136.10	6686.10	2.10	1.23
10/27/14	4392.64	8706.70	5912.60	2.08	1.24
10/28/14	4628.53	9380.80	4722.40	2.00	1.21
10/29/14	4652.78	9339.50	2191.20	1.99	1.18
10/30/14	4739.86	9653.20	2187.40	1.98	1.16
10/31/14	4690.26	9478.10	1842.90	1.98	1.15
11/1/14	4681.44	9456.90	3147.60	1.97	1.13
11/2/14	4876.54	9446.10	3870.90	1.97	1.13
11/3/14	4286.82	8746.70	4572.90	1.97	1.13
11/4/14	4419.09	9052.60	5365.20	1.97	1.11
11/5/14	4681.44	9480.30	5893.40	1.96	1.10
11/6/14	4060.85	8240.60	5894.60	1.96	1.10



11/7/14	4630.73	9428.50	6704.80	1.96	1.11
11/8/14	4567.90	9348.30	7298.70	1.95	1.15
11/9/14	4638.45	9586.10	9657.60	1.95	1.21
11/10/14	4814.81	9982.80	9834.80	1.95	1.24
11/11/14	4868.83	8827.50	8431.30	1.94	1.27
11/12/14	4837.96	9893.00	7795.70	1.94	1.29
11/13/14	3085.32	6559.30	5048.60	1.94	1.30
11/14/14	615.08	3593.90	4090.10	1.95	1.32
11/15/14	235.89	1415.00	1592.20	1.97	1.33
11/16/14	0.00	678.70	2131.50	1.99	1.36
11/17/14	0.00	370.80	1352.00	2.00	1.40
11/18/14	1248.90	3665.00	4610.70	2.03	1.45
11/19/14	3004.85	6711.40	4756.90	2.05	1.46
11/20/14	4458.77	8822.10	5281.30	2.07	1.44
11/21/14	4522.71	8933.90	6256.10	2.07	1.43
11/22/14	4607.58	9113.20	6684.30	2.07	1.41
11/23/14	4749.78	9340.90	7530.90	2.07	1.41
11/24/14	4451.06	8739.10	7048.50	2.06	1.39
11/25/14	3666.23	8017.00	5291.60	2.07	1.39
11/26/14	4727.73	9236.10	5095.00	2.07	1.38
11/27/14	4333.11	8576.40	4315.60	2.07	1.38
11/28/14	4737.65	9321.90	5123.50	2.06	1.40
11/29/14	4637.35	9228.00	6039.60	2.06	1.44
11/30/14	4649.47	9162.50	5202.90	2.06	1.47
12/1/14	3800.71	7641.40	6671.90	2.06	1.51
12/2/14	4376.10	8763.90	3969.20	2.06	1.52
12/3/14	4304.45	8390.00	3732.70	2.06	1.51
12/4/14	4421.30	8815.00	4922.10	2.06	1.51
12/5/14	4488.54	8794.00	5878.50	2.05	1.51
12/6/14	4195.33	8501.60	4083.90	2.05	1.49
12/7/14	1606.04	4746.80	2114.10	2.07	1.49
12/8/14	2109.79	4752.80	2797.00	2.07	1.48
12/10/14	1146.38	3469.60	829.80	2.08	1.45
12/11/14	4555.78	9137.20	1580.90	2.08	1.37
12/12/14	4594.36	9061.70	881.90	2.09	1.30
12/13/14	4641.75	9142.50	991.60	2.09	1.23
12/14/14	4586.64	9471.60	1598.60	2.08	1.18
12/15/14	443.12	1487.90	154.20	2.07	1.15
12/19/14	54.01	797.40	504.70	2.06	1.14
12/20/14	3353.17	6621.20	1390.40	2.06	1.10
12/21/14	4511.68	8888.00	3864.70	2.05	1.07
12/22/14	2919.97	6115.60	2237.60	2.04	1.04
12/23/14	4514.99	8860.60	4387.20	2.03	1.02

12/24/14	4674.82	9325.40	5500.50	2.03	1.02
12/25/14	4182.10	8430.20	4659.80	2.03	1.01
12/26/14	2259.70	4594.80	2427.10	2.04	0.99
12/27/14	4557.98	9220.30	1374.30	2.04	0.94
12/28/14	4550.26	9166.60	2284.70	2.04	0.90
12/29/14	4518.30	9199.30	2726.10	2.04	0.87
12/30/14	4387.13	9118.50	2827.90	2.04	0.85
12/31/14	4557.98	9193.80	1303.60	2.04	0.82

**NOTES:**

A.The first twenty-nine 30-day rolling averages reported on this spreadsheet were calculated from data found on another spreadsheet. Commencing with day thirty, the 30-day rolling averages are calculated on this spreadsheet.

B.Negative numbers for total pounds of pollutant per day are read as a zero (0) when calculating the 30-day rolling average. Negative numbers were validated and represent precision/accuracy limitations of the CEMS at extremely low concentrations.

C. SO2 limit is applicable Dec.31.2014; Data collected from this data will be summed to the 30 day rolling average value as defined in the Consent Order.

D. Dates listed above represent all days with Kiln Operation as defined by the Consent Decree

## Attachment G

### CEMS Data For San Juan Kiln 3

FACILITY	SAN JUAN			NOX Limit	SO2 Limit
KILN	3			2.30	1.00
DATE	CLINKER PRODUCTION	NOX RATE	SO2 RATE	NOX 30DRA	SO2 30DRA
	TON/DAY	LB/DAY	LB/DAY	LB/TON- CK	LB/TON- CK
1/8/2014	0.00	0	0	N/A	N/A
1/9/2014	0.00	0	0	N/A	N/A
1/10/2014	71.65	538.6	85.4	N/A	N/A
1/17/2014	0.00	0	0	N/A	N/A
1/18/2014	42.99	302.6	471.3	N/A	N/A
1/19/2014	1127.29	2300.3	1931.8	N/A	N/A
1/20/2014	1566.75	2666.3	8.3	N/A	N/A
1/21/2014	1443.15	2583.4	0	N/A	N/A
1/22/2014	1513.61	2878.3	0	N/A	N/A
1/23/2014	902.79	2118.8	303.9	N/A	N/A
1/24/2014	420.35	942.1	0	N/A	N/A
1/25/2014	1490.32	2603.5	3.5	N/A	N/A
1/26/2014	1251.49	2184.4	0	N/A	N/A
1/27/2014	630.52	1072.9	741.3	N/A	N/A
1/28/2014	1927.39	2740.7	267.7	N/A	N/A
1/29/2014	1249.10	2652.5	69.4	N/A	N/A
1/30/2014	1905.89	3413.9	17.4	N/A	N/A
1/31/2014	1996.65	3434.4	12.5	N/A	N/A
2/1/2014	1953.66	3180.2	0	N/A	N/A
2/2/2014	339.14	433	15.3	N/A	N/A
2/3/2014	1652.73	3067.5	9.9	N/A	N/A
2/4/2014	1882.01	3324.4	0.1	N/A	N/A
2/5/2014	1967.99	4071.3	190.7	N/A	N/A
2/6/2014	2010.98	3362.5	89.7	N/A	N/A
2/7/2014	2006.20	3513	0	N/A	N/A
2/8/2014	2015.76	3258.1	5	N/A	N/A
2/9/2014	1972.77	3937.5	19.2	N/A	N/A
2/10/2014	1704.08	3632.9	81.9	N/A	N/A
2/11/2014	1763.79	3815.3	0	N/A	N/A
2/12/2014	835.92	1541.2	2.7	1.85	0.11
2/13/2014	1828.87	3443.1	49.8	1.85	0.11
2/14/2014	1935.15	3097.4	1183.2	1.84	0.13

2/15/2014	1375.68	2875.4	21.1	1.84	0.13
2/17/2014	0.00	0	0	1.84	0.13
2/18/2014	363.03	532.1	12.7	1.83	0.12
2/19/2014	1905.89	3601.8	0.1	1.83	0.07
2/20/2014	1996.65	4307.7	10.2	1.84	0.07
2/21/2014	1781.70	3372	1945.1	1.85	0.11
2/22/2014	1776.92	3624.7	102.8	1.85	0.11
2/23/2014	769.04	1627	3.8	1.85	0.11
3/19/2014	0.00	5441.8	3061.3	1.97	0.18
3/20/2014	0.00	2074	1190	2.02	0.21
3/21/2014	420.35	468	333.5	2.02	0.22
3/22/2014	601.86	155.9	14.5	2.00	0.21
3/23/2014	616.19	80.9	26.8	2.00	0.21
3/24/2014	1423.45	981.6	399.1	1.95	0.22
3/25/2014	1241.93	979.2	132.7	1.92	0.22
3/26/2014	1729.16	573.2	276.8	1.87	0.23
3/27/2014	1824.69	2290.4	335.2	1.85	0.24
3/28/2014	1313.58	2617	199.2	1.86	0.24
3/29/2014	1194.17	1955.4	406.4	1.85	0.25
3/30/2014	1595.41	3091	0	1.86	0.25
3/31/2014	1676.61	2851.7	1	1.84	0.25
4/1/2014	1858.13	3116.2	35.3	1.84	0.25
4/2/2014	878.91	1341.8	74.3	1.84	0.26
4/3/2014	444.23	770.6	77.8	1.85	0.27
4/4/2014	1055.64	2036.5	26.1	1.85	0.28
4/5/2014	1676.61	2601.8	0	1.82	0.28
4/6/2014	1614.51	2789.3	0	1.80	0.28
4/7/2014	1977.54	2683.7	0.3	1.77	0.27
4/8/2014	2073.08	2535.3	0.8	1.74	0.27
4/9/2014	1547.64	1959.6	5.4	1.72	0.24
4/10/2014	391.69	452.6	329.9	1.70	0.25
5/10/2014	0.00	0	0	1.70	0.25
5/11/2014	0.00	0	0	1.71	0.25
5/13/2014	210.54	1088.8	1723.4	1.72	0.32
5/14/2014	1160.73	3396.3	2366.6	1.73	0.40
5/15/2014	1366.86	3312.6	817.4	1.75	0.37
5/16/2014	1728.42	3849	525.8	1.76	0.38
5/17/2014	1787.95	3778	660.6	1.77	0.39
5/18/2014	1848.57	4291.6	530.3	1.65	0.30
5/19/2014	1744.96	3879.8	510.2	1.62	0.27
5/20/2014	1057.12	1995.4	644.9	1.63	0.27
5/21/2014	2069.04	2797.9	1776.8	1.64	0.30
5/22/2014	2087.78	4655.1	989.7	1.69	0.32

5/23/2014	1724.01	3815.6	1395.6	1.75	0.34
5/24/2014	2087.78	3217.2	565.6	1.77	0.34
5/25/2014	2102.11	3592.1	589.4	1.82	0.35
5/26/2014	2099.90	3587.5	715.3	1.84	0.35
5/27/2014	2105.41	3580.3	947.8	1.83	0.36
5/28/2014	1844.16	2804.6	696	1.82	0.37
5/29/2014	1289.70	2487.1	676.4	1.82	0.38
5/30/2014	911.61	1644	427.7	1.83	0.40
5/31/2014	1823.22	3475	748.3	1.84	0.42
6/30/2014	110.23	1770.3	2802.8	1.88	0.49
7/1/2014	774.92	3316.5	3233.7	1.93	0.56
7/2/2014	982.15	3111.9	1001.9	1.95	0.58
7/3/2014	1635.81	2597.1	788.7	1.96	0.60
7/4/2014	1421.97	2472.8	390.4	1.96	0.62
7/5/2014	1345.91	3211.9	489.2	2.00	0.64
7/6/2014	1184.97	3534.6	612.9	2.07	0.67
7/7/2014	704.37	2612.2	667.3	2.13	0.70
7/8/2014	1155.21	4527.4	530.9	2.19	0.69
7/9/2014	1643.53	4767.2	3045.5	2.22	0.73
7/10/2014	1823.20	3399.3	2373.7	2.20	0.76
7/11/2014	473.99	1030.1	136.7	2.19	0.72
7/12/2014	594.14	890.6	337.8	2.16	0.68
7/13/2014	559.97	853.2	281.6	2.14	0.68
7/14/2014	1634.71	2633	342	2.12	0.68
7/15/2014	1883.83	3207.3	468.4	2.10	0.67
7/16/2014	740.75	1330.9	358.1	2.09	0.69
7/17/2014	1797.85	2660.7	730.9	2.05	0.69
7/18/2014	832.24	1583.4	247.7	2.05	0.68
7/19/2014	1970.91	3298.7	642.9	2.07	0.66
7/20/2014	535.72	1074.7	242.2	2.06	0.67
7/21/2014	1582.90	2060.5	947.8	2.03	0.66
7/22/2014	1716.28	2667.4	1077.7	2.03	0.68
7/23/2014	809.09	1596	465.1	2.05	0.70
7/24/2014	1178.36	2222.8	828.4	2.06	0.72
7/25/2014	1703.05	2536.4	184.3	2.06	0.70
7/26/2014	1997.37	3204.8	3493.9	2.06	0.78
7/27/2014	1987.45	3061.5	3989.8	2.04	0.85
7/28/2014	232.59	2249.2	1960.7	2.09	0.91
7/29/2014	2093.27	2999.6	307.1	2.06	0.89
7/30/2014	779.33	1535	667.1	2.02	0.82
9/7/2014	0.00	312.3	217.9	1.98	0.75
9/8/2014	318.56	2446.5	1011.5	2.00	0.77
9/9/2014	1024.04	2102.2	389.8	2.02	0.77

9/10/2014	1806.67	5168.6	569.3	2.07	0.76
9/11/2014	1901.47	5257.5	431.9	2.10	0.75
9/12/2014	1720.69	4233.8	316.6	2.08	0.73
9/13/2014	1789.03	3910.2	347.4	2.06	0.70
9/14/2014	1926.82	4531.5	433.2	2.02	0.69
9/15/2014	1995.16	4855.3	360.9	2.00	0.61
9/16/2014	1737.22	4191.7	331.2	2.03	0.56
9/17/2014	1995.16	4101.4	435.9	2.03	0.55
9/18/2014	1729.51	3605.8	408.2	2.04	0.54
9/19/2014	1153.01	2526.3	295.7	2.05	0.53
9/20/2014	1328.27	3811.3	346.5	2.09	0.53
9/21/2014	1941.15	3622.8	406.6	2.10	0.53
9/22/2014	1969.81	4182.1	362.5	2.10	0.52
9/23/2014	1978.63	3801.6	313.2	2.12	0.50
9/24/2014	1944.4572	3994.3	294.7	2.12	0.49
9/25/2014	1995.163	6755.4	2149	2.20	0.53
9/26/2014	1935.6388	5372.1	2278.2	2.22	0.55
9/27/2014	886.2492	1692.4	2291.2	2.25	0.59
11/5/2014	0	649.9	334.1	2.29	0.60
11/6/2014	0	1369	792.6	2.33	0.62
11/7/2014	0	93.1	312.5	2.34	0.62
11/8/2014	197.3117	900.9	334.2	2.39	0.65
11/9/2014	1014.116	2515.6	190.3	2.43	0.58
11/10/2014	1237.8829	1791.4	198.1	2.45	0.49
11/11/2014	1651.2454	2005.8	158.5	2.36	0.43
11/12/2014	1320.5554	1950.9	342.2	2.38	0.44
11/13/2014	1263.2358	2347.7	543.8	2.37	0.43
11/14/2014	730.8249	2432.3	349.6	2.38	0.43
11/15/2014	1340.3968	3032	203.5	2.33	0.40
11/16/2014	1610.4603	3687.7	230.8	2.34	0.39
11/17/2014	1576.289	3518	320.6	2.31	0.38
11/18/2014	1552.0384	2798.3	170.9	2.27	0.38
11/19/2014	1054.9011	2487.2	557.4	2.26	0.39
11/20/2014	950.1826	2831.1	497.7	2.29	0.41
11/21/2014	1039.4689	2656.7	429.9	2.29	0.42
11/22/2014	1013.0137	2068.1	394.8	2.28	0.43
11/23/2014	1612.6649	3052.5	271.9	2.25	0.43
11/24/2014	1718.4857	4088.2	1284.7	2.27	0.45
11/25/2014	1318.3508	2200.3	1187.9	2.26	0.48
11/26/2014	177.4703	372.9	296.6	2.26	0.49
11/27/2014	778.2238	1750.1	578.5	2.23	0.50
11/28/2014	955.6941	1956.5	278.4	2.25	0.52
11/29/2014	1244.4967	3952.7	1617.9	2.29	0.56

11/30/2014	1059.3103	2807.8	727.7	2.32	0.59
12/1/2014	967.8194	1635.9	259.5	2.32	0.61
12/2/2014	426.5901	2978.9	1917.5	2.32	0.63
12/10/2014	886.2492	1583.1	416.7	2.27	0.59
12/11/2014	773.8146	1209	116.9	2.26	0.52
12/12/2014	1720.6903	3850.9	230.2	2.24	0.49
12/13/2014	1990.7538	5209.7	509.6	2.22	0.45
12/14/2014	1764.7823	5102.2	209.3	2.25	0.42
12/15/2014	1913.5928	5078.2	224.3	2.26	0.40
12/16/2014	1463.8544	4132.2	335.7	2.28	0.40
12/17/2014	1453.9337	3601.7	250	2.31	0.40
12/18/2014	2027.1297	3984	261.9	2.34	0.40
12/19/2014	2148.3827	4359.4	1342.6	2.36	0.42
12/20/2014	534.6155	1398.8	1044.6	2.38	0.44
12/21/2014	1904.7744	3383.8	1501.2	2.33	0.45
12/22/2014	1344.806	3770.9	483.5	2.35	0.46
12/23/2014	1327.1692	3868.9	418.2	2.37	0.47
12/24/2014	1636.9155	4272.1	540	2.38	0.47
12/25/2014	1318.3508	4850.3	546	2.45	0.49
12/26/2014	147.7082	511.5	152.9	2.46	0.49

**NOTES:**

A. Commencing with day thirty, the 30-day rolling averages are calculated on this spreadsheet.

B. The zero values recorded are validated and represent the limits of detection and time of operation of the equipment.

C. Limits where applicable on December 31, 2013; at this time data was collected to meet the definition of the 30 Day Rolling Average.

D. Dates listed above represent all days with Kiln Operation as defined by the Consent Decree

**Attachment H**  
**Martinsburg Investigation Report**





**Essroc**  
**Italcementi Group**

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U.S.A.

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September 16, 2014

Director, Air Enforcement Division  
U.S. Environmental Protection Agency  
MC 2242A  
1200 Pennsylvania Avenue, NW  
Washington, D.C. 20460

Chief, Environmental Enforcement Section  
Environment and Natural Resources Division  
U.S. Department of Justice  
Box 7611 Ben Franklin Station  
Washington, D.C. 20044-7611  
Re: DOJ No. 90-5-2-1-09608

Chief, Air Enforcement Branch  
U.S. EPA Region III  
1650 Arch Street (3PM52)  
Philadelphia, PA 19103-2029

Jesse Adkins, Assistant Director, Compliance and  
Enforcement Section  
West Virginia Division of Air Quality  
601 57<sup>th</sup> Street SE  
Charleston, WV 25304

Re:Essroc Cement Company – Consent Decree  
Civil Action No. 2:11-cv-650-DSC  
Martinsburg, WV Cement Plant  
30-Day Follow Up Investigation Report  
Amendment to Semi-Annual Report  
July 30-31, 2014 SO2 Emission Limit Exceedance

To Whom It May Concern:

As a follow-up to our 10-Day Notice letter dated August 8, 2014, we are submitting the following additional information regarding the Events of July 30-31, 2014 in which the Essroc Martinsburg facility exceeded the 1.50 lbs/ston clinker limit specified in the EPA Consent Decree. This letter serves as the 30-Day Follow Up Investigation Report and the Amendment to the Semi-Annual Report of July 2014.

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### *Description Non-Compliance Event*

On July 29, 2014 the Martinsburg facility personnel noticed a rise in SO<sub>2</sub> emissions that caused the 30-day rolling average to approach the Consent Decree limit of 1.50 lb/ton of clinker. At that time, facility personnel from various departments attempted to avoid a non-compliance event by making adjustments to the injection rate of lime and the frequency of cleanout to the strainers in the system. The process adjustments were unsuccessful and the limit was exceeded on July 30, 2014 by 0.01 lb/ton of clinker, settling at a value of 1.51 lb/ton of clinker. The 30-Day rolling average remained at 1.51 lb/ton of clinker on July 31, 2014. The facility was able to achieve compliance with the limit on August 1, 2014. The rolling average has remained below the 1.50 lb/ton of clinker limit.

### *Explanation of the Non-Compliance likely cause*

As part of the requirements of this decree, the facility continuously operates a wet lime scrubber to control SO<sub>2</sub> emissions. The system injects a water-lime slurry into the process gases for SO<sub>2</sub> removal via precipitation of calcium compounds. The system dilutes predetermined amounts of lime in water and then pumps the slurry into the process gases. An inline strainer filters the slurry stream to prevent damage from foreign materials or lime quality to critical process equipment, such as pumps, valves and process control information meters.

On or about July 29, 2014, the injection system had difficulty reaching the required set-point for lime slurry injection rate. The production technicians investigated the matter and it was found that the system was unable to maintain the needed injection rate because the strainer baskets had clogged with debris. Subsequent investigation revealed that the lime slurry quality had been compromised and large chunks of lime scale and possibly small gravel had clogged the strainers. Prior to this event, scaling and gravel particles had not plugged the strainers at the rate experienced in late July. Previously, the facility had followed the vendor-recommended strainer cleanout schedule of one cleanout per operating day. Facility personnel increased the schedule for cleanout of the strainers to about once per hour to maintain optimum flow rates from the system until the situation subsided.

Additionally, during this time, an unexpected malfunction of the Raw Mill aggravated the situation which finally led to the exceedance. Raw Mill feed provides additional SO<sub>2</sub> scrubbing capacity to the kiln. Facility maintenance personnel worked expeditiously to bring raw mill operation back to normal by replacing a part of the mill coupling that had unexpectedly malfunctioned. Additionally, the process control team maintained a careful

watch kiln feed into the system to minimize sulfur input to the kiln, and minimize emissions.


*Remedial steps taken, or to be taken, to prevent or minimize such violation*

The facility's actions before and during the event described, resulted in the minimization of the effects of the exceedance. Because of these actions, the resulting non-compliance event was maintained at 0.66% of the 1.50 lb/ton of clinker limit. Essroc is confident that with better control of the quality of the lime entering the system, in conjunction with other operational factors, it will be able to maintain SO<sub>2</sub> emissions below the 1.50 lb/ton of clinker limit.

Furthermore, Essroc has initiated conversations with our lime suppliers to review the quality of the lime delivered to the facility. We will also verify the functionality of the strainer capacity to be better prepared for unforeseen lime quality issues in the future. If the assessment deems the strainer capacities under-designed for peak operations, as experienced during the described period, we will evaluate a redesign of the strainers to provide better protection from lime quality issues. Additionally, a system for increased monitoring will be implemented on the raw feed sulfur concentrations to better predict SO<sub>2</sub> emission increases during periods of raw mill downtime. Essroc will develop a written procedure describing these action steps to prevent future non-compliance events and train personnel on the developed procedure. An update on all described actions will be provided in the next semi-annual report dated January 2015.

Please telephone if you should have any questions.

Very truly yours,



Derek Nicholls  
Senior Vice President-Technical Director

September 16, 2014

Jon,

Please provide the confirmation below as applicable for the correspondence attached. Thank you.

Director, Air Enforcement Division  
U.S. Environmental Protection Agency  
MC 2242A  
1200 Pennsylvania Avenue, NW  
Washington, D.C. 20460

91 7199 9991 7033 7439 8208

Chief, Environmental Enforcement Section  
Environment and Natural Resources Division  
U.S. Department of Justice  
Box 7611 Ben Franklin Station  
Washington, D.C. 20044-7611  
Re: DOJ No. 90-5-2-1-09608

91 7199 9991 7033 7439 8215

Chief, Air Enforcement Branch  
U.S. EPA Region III  
1650 Arch Street (3PM52)  
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91 7199 9991 7033 7439 8192

Jesse Adkins, Assistant Director, Compliance and  
Enforcement Section  
West Virginia Division of Air Quality  
601 57<sup>th</sup> Street SE  
Charleston, WV 25304

91 7199 9991 7033 7439 8185

Regards,

**Luis H. Rodriguez**